DOCUMENT RESUME

ED 449 067 SO 032 193

AUTHOR Wodon, Quentin T.
TITLE Poverty and Policy in Latin America and the Caribbean. World Bank Technical Paper No. 467.
INSTITUTION World Bank, Washington, DC.
ISBN ISBN-0-8213-4754-3
ISSN ISSN-0253-7494
PUB DATE 2000-00-00
NOTE 149p.; With contributions from Robert Ayres, Matias Barenstein, Norman Hicks, Kihoon Lee, William Maloney, Pia Peeters, Corinne Siaens, and Shlomo Yitzhaki.
AVAILABLE FROM World Bank, 1818 H Street, NW, Washington, DC 20433 ($22). Tel: 202-477-1234; Fax: 202-477-6391; e-mail: books@worldbank.org; Web site: http://www.worldbank.org.
PUB TYPE Reports - Evaluative (142)
EDRS PRICE EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Civil Rights; *Developing Nations; Educational Benefits; *Empowerment; Foreign Countries; Income; *Poverty; *Social Problems; Social Science Research
IDENTIFIERS Caribbean; Latin America; *Policy Issues; Regional Surveys

ABSTRACT

Although the progress toward poverty reduction remains sluggish, other dimensions of social welfare in the Latin American and Caribbean (LAC) region show signs of improvement. Adult literacy and school enrollment rates, life expectancy at birth, access to safe water, and nutrition indicators are improving. However, other factors demonstrate that many problems persist, especially the inequality between rich and poor. This report analyzes the evolution of poverty and inequality in the LAC region from 1986 to 1996 with projections to 1998. It reviews the policies which have been advocated or implemented to reduce poverty. The report combines: (1) the results of new empirical work using household surveys from 12 countries (Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, Honduras, Mexico, Paraguay, Uruguay, and Republica Bolivariana de Venezuela); (2) short theoretical developments, some of which introduce new research techniques; and (3) a review of the literature on issues related to poverty, inequality, and social policy in LAC. Chapters three through six follow the framework proposed in the forthcoming World Development Report 2000-2001. The framework identifies three essential elements for poverty reduction: (1) opportunities for the poor and investments in the human capital of the poor; (2) security through social safety nets; and (3) empowerment. Contains extensive tables and figures and 213 references. (BT)

Reproductions supplied by EDRS are the best that can be made
from the original document.

80

WORLD BANK TECHNICAL PAPER NO. 467

Work in progress
for public discussion

ED 449 067

Poverty and Policy in Latin America and the Caribbean

J. Feather

2A

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

- ☑ This document has been reproduced as received from the person or organization originating it.
- ☐ Minor changes have been made to improve reproduction quality.
- • Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Quentin T. Wodon

With contributions from
Robert Ayres, Matias Barenstein, Norman Hicks, Kihoon Lee, William Maloney, Pia Peeters, Corinne Siaens, and Shlomo Yitzhaki

S0032193

BEST COPY AVAILABLE

2

Recent World Bank Technical Papers

No. 397 Lovei, *Phasing Out Lead from Gasoline: Worldwide Experience and Policy Implications*

No. 398 Ayres, Anderson, and Hanrahan, *Setting Priorities for Environmental MAnagement: An Application to the Mining Sector in Bolivia*

No. 399 Kerf, Gray, Irwin, Lévesque, Taylor, and Klein, *Concessions for Infrastructure: A Guide to Their Design and Award*

No. 401 Benson and Clay, *The Impact of Drought on Sub-Saharan African Economies: A Preliminary Examination*

No. 402 Dinar, Mendelsohn, Evenson, Parikh, Sanghi, Kumar, McKinsey, and Lonergan, *Measuring the Impact of Climate Change on Indian Agriculture*

No. 403 Welch and Frémond, *The Case-by-Case Approach to Privatization: Techniques and Examples*

No. 404 Stephenson, Donnay, Frolova, Melnick, and Worzala, *Improving Women's Health Services in the Russian Federation: Results of a Pilot Project*

No. 405 Onorato, Fox, and Strongman, *World Bank Group Assistance for Minerals Sector Development and Reform in Member Countries*

No. 406 Milazzo, *Subsidies in World Fisheries: A Reexamination*

No. 407 Wiens and Guadagni, *Designing Rules for Demand-Driven Rural Investment Funds: The Latin American Experience*

No. 408 Donovan and Frank, *Soil Fertility Management in Sub-Saharan Africa*

No. 409 Heggie and Vickers, *Commercial Management and Financing of Roads*

No. 410 Sayeg, *Successful Conversion to Unleaded Gasoline in Thailand*

No. 411 Calvo, *Options for Managing and Financing Rural Transport Infrastructure*

No. 413 Langford, Forster, and Malcolm, *Toward a Financially Sustainable Irrigation System: Lessons from the State of Victoria, Australia, 1984–1994*

No. 414 Salman and Boisson de Chazournes, *International Watercourses: Enhancing Cooperation and Managing Conflict, Proceedings of a World Bank Seminar*

No. 415 Feitelson and Haddad, *Identification of Joint Management Structures for Shared Aquifers: A Cooperative Palestinian-Israeli Effort*

No. 416 Miller and Reidinger, eds., *Comprehensive River Basin Development: The Tennessee Valley Authority*

No. 417 Rutkowski, *Welfare and the Labor Market in Poland: Social Policy during Economic Transition*

No. 418 Okidegbe and Associates, *Agriculture Sector Programs: Sourcebook*

No. 420 Francis and others, *Hard Lessons: Primary Schools, Community, and Social Capital in Nigeria*

No. 421 Gert Jan Bom, Robert Foster, Ebel Dijkstra, and Marja Tummers, *Evaporative Air-Conditioning: Applications for Environmentally Friendly Cooling*

No. 422 Peter Quaak, Harrie Knoef, and Huber Stassen, *Energy from Biomass: A Review of Combustion and Gasification Technologies*

No. 423 Energy Sector Unit, Europe and Central Asia Region, World Bank, *Non-Payment in the Electricity Sector in Eastern Europe and the Former Soviet Union*

No. 424 Jaffee, ed., *Southern African Agribusiness: Gaining through Regional Collaboration*

No. 425 Mohan, ed., *Bibliography of Publications: Africa Region, 1993–98*

No. 426 Rushbrook and Pugh, *Solid Waste Landfills in Middle- and Lower-Income Countries: A Technical Guide to Planning, Design, and Operation*

No. 427 Mariño and Kemper, *Institutional Frameworks in Successful Water Markets: Brazil, Spain, and Colorado, USA*

No. 428 C. Mark Blackden and Chitra Bhanu, *Gender, Growth, and Poverty Reduction: Special Program of Assistance for Africa, 1998 Status Report on Poverty in Sub-Saharan Africa*

No. 429 Gary McMahon, José Luis Evia, Alberto Pascó-Font, and José Miguel Sánchez, *An Environmental Study of Artisanal, Small, and Medium Mining in Bolivia, Chile, and Peru*

No. 430 Maria Dakolias, *Court Performance around the World: A Comparative Perspective*

No. 431 Severin Kodderitzsch, *Reforms in Albanian Agriculture: Assessing a Sector in Transition*

No. 432 Luiz Gabriel Azevedo, Musa Asad, and Larry D. Simpson, *Management of Water Resources: Bulk Water Pricing in Brazil*

No. 433 Malcolm Rowat and José Astigarraga, *Latin American Insolvency Systems: A Comparative Assessment*

(List continues on the inside back cover)

WORLD BANK TECHNICAL PAPER NO. 467

Poverty and Policy in Latin America and the Caribbean

Quentin T. Wodon

With contributions from
Robert Ayres, Matias Barenstein, Norman Hicks, Kihoon Lee, William Maloney, Pia Peeters, Corinne Siaens, and Shlomo Yitzhaki

The World Bank
Washington, D.C.

Copyright © 2000
The International Bank for Reconstruction
and Development/THE WORLD BANK
1818 H Street, N.W.
Washington, D.C. 20433, U.S.A.

All rights reserved
Manufactured in the United States of America
First printing June 2000

Technical Papers are published to communicate the results of the Bank's work to the development community with the least possible delay. The typescript of this paper therefore has not been prepared in accordance with the procedures appropriate to formal printed texts, and the World Bank accepts no responsibility for errors. Some sources cited in this paper may be informal documents that are not readily available.

The findings, interpretations, and conclusions expressed in this paper are entirely those of the author(s) and should not be attributed in any manner to the World Bank, to its affiliated organizations, or to members of its Board of Executive Directors or the countries they represent. The World Bank does not guarantee the accuracy of the data included in this publication and accepts no responsibility for any consequence of their use. The boundaries, colors, denominations, and other information shown on any map in this volume do not imply on the part of the World Bank Group any judgment on the legal status of any territory or the endorsement or acceptance of such boundaries.

The material in this publication is copyrighted. The World Bank encourages dissemination of its work and will normally grant permission promptly.

Permission to photocopy items for internal or personal use, for the internal or personal use of specific clients, or for educational classroom use, is granted by the World Bank, provided that the appropriate fee is paid directly to Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, U.S.A., telephone 978-750-8400, fax 978-750-4470. Please contact the Copyright Clearance Center before photocopying items.

For permission to reprint individual articles or chapters, please fax your request with complete information to the Republication Department, Copyright Clearance Center, fax 978-750-4470.

All other queries on rights and licenses should be addressed to the World Bank at the address above or faxed to 202-522-2422.

ISBN: 0-8213-4754-3
ISSN: 0253-7494

Quentin T. Wodon is senior economist, Robert Ayres is senior social scientist, Matias Barenstein is a consultant, Norman Hicks is sector manager, Kihoon Lee is a consultant, William Maloney is senior economist, Pia Peeters is a consultant, and Corinne Siaens is a consultant, all in the Poverty Reduction and Economic Management division of the World Bank's Latin America and the Caribbean Region. Shlomo Yitzhaki is professor of economics at Hebrew University in Jerusalem.

Library of Congress Cataloging-in-Publication Data has been applied for.

CONTENTS

FOREWORD vii

ABSTRACT viii

ACKNOWLEDGMENTS ix

EXECUTIVE SUMMARY 1

CHAPTER I. POVERTY 15
Based on work by Kihoon Lee, Pia Peeters, Corinne Siaens, and Quentin Wodon
- Income Poverty Remains High in Latin America and the Caribbean Despite Some Progress in the 1990s 15
- Latin America and the Caribbean's Performance in Non-Monetary Indicators of Well-Being is Better 32

CHAPTER II. INEQUALITY 37
Based on work by Matias Barenstein, Corinne Siaens, and Quentin Wodon
- Latin America and Caribbean Countries Have High Levels of Income Inequality 37
- Sources of Income and Consumption Contribute to Inequality in Different Ways 42
- The Impact of Education on Income Inequality May Not Be as Large as Believed 48
- Another Driver of Inequality in Latin America and the Caribbean is The Extent of Self-Employment 49
- Another Reason for High Inequality in Latin America and the Caribbean Has to Do With Income Mobility 51

CHAPTER III. OPPORTUNITY (I)—BROAD-BASED GROWTH 55
Based on work by Robert Ayres, William Maloney, and Quentin Wodon
- Growth Improves Both Monetary and Non-Monetary Indicators of Well-Being 55
- In Urban Areas, Informal Employment Has Been Rising 59
- In Rural Areas, the Poor Lack Access to Land, Credit, and Other Assets 64

CHAPTER IV. OPPORTUNITY (II)—INVESTMENTS IN HUMAN CAPITAL 69
Based on work by Corinne Siaens and Quentin Wodon
- Education Helps in Emerging from Poverty 69
- The Cost of Child Labor in Terms of Forgone Future Life-Time Earnings is High 78

CHAPTER V. SECURITY 89
Based on work by Norman Hicks and Quentin Wodon
- The Poor Tend to be Hurt During Economic Crises by Cuts in Targeted Spending 89
- Safety Nets Help to Protect the Poor from Economic Shocks 92
- A First Group of Safety Net Programs Provide Temporary Public Employment 94
- A Second Group of Safety Net Programs are Food-Based 98
- Other Types of Programs Can Benefit the Poor During a Crisis 102
- Tools are Available for Assessing the Targeting Performance of Programs 104

CHAPTER VI. EMPOWERMENT 109
Based on work by Robert Ayres and Quentin Wodon
- This Report has a Central Focus, with Corresponding Limits 109
- Poverty Assessments Highlight the Need to Make Institutions Pro-Poor 113
- Some Social Funds Have Managed to be Responsive to the Needs of the Poor 118
- Issues Related to Empowerment Also Include Social Capital and Exclusion 122

REFERENCES 123

LIST OF TABLES

Table ES.1: Population and Number of Poor and Extreme Poor in Latin America and the Caribbean, Millions, 1986–98 2
Table ES.2: Non-Monetary Indicators of Well-Being in Latin America and the Caribbean, 1985–97 3
Table ES.3: Urban and Rural Poverty in Latin America and the Caribbean, 1986–96 3
Table ES.4: Income Inequality Measures in Latin America and the Caribbean, 1986–96 4
Table ES.5: Earnings Inequality Decomposition for Salaried vs. Self-Employed Workers 5
Table ES.6: Elasticities of Poverty with Respect to Growth and Inequality in Latin America and the Caribbean 7
Table ES.7: Impact of Growth on Non-Monetary Indicators of Well-Being 7
Table ES.8: Return to Education for Urban Men 25 to 60 Years Old, by Years of Schooling 8
Table ES.9: Substitution between Child Labor and Schooling, and Cost of Child Labor 9
Table ES.10: Elasticity to Growth of Targeted Public Spending per Poor Person 10

Table 1.1: Poverty Measures for Latin America and the Caribbean, Population-Weighted Average, 1986–96 16
Table 1.2: Poverty Measures for Latin America and the Caribbean, Average with Equal Country Weights, 1986–96 16
Table 1.3: Population and Number of Poor and Extreme Poor in Latin America and the Caribbean, Millions, 1986–96 16
Table 1.4: Poverty and Extreme Poverty in Latin America and the Caribbean According to Other Studies 20
Table 1.5: Projections for Poverty Measures in Latin America and the Caribbean to the Year 1998 20
Table 1.6: Poverty Measures by Country, 1986–96 26
Table 1.7: Poverty Measures for Latin America and the Caribbean, Urban and Rural Areas, 1986–96 28
Table 1.8: Urban Poverty Measures for Countries with National Coverage, 1986–96 29
Table 1.9: Rural Poverty Measures for Countries with National Coverage, 1986–96 30
Table 1.10: Poverty Measures in Brazil by Region, 1989–95 31
Table 1.11: Global Poverty Update, World Bank, 1987–98 32
Table 1.12: The Human Development Index and Its Underlying Indices and Indicators by Region, 1997 33
Table 1.13: Non-Monetary Indicators of Well-Being in Latin America and the Caribbean, 1985–87 35
Table 1.14: Incidence of Stunting in Latin America and the Caribbean, 1980–95 35

Table 2.1: Income Inequality Measures for Latin America and the Caribbean, 1986–96 37
Table 2.2: Income Inequality Measures by Country, 1986–96 39
Table 2.3: Urban Inequality Measures for Countries with National Coverage, 1986–96 40
Table 2.4: Rural Inequality Measures for Countries with National Coverage, 1986–96 40
Table 2.5: Source Decomposition of Gini Index: Absolute Contributions, 1995 42
Table 2.6: Source Decomposition of Gini Index: Gini Income Elasticities, 1995 44
Table 2.7: Source Decomposition of Gini Index: Change in Gini Elasticities, 1989–95 45
Table 2.8: Source Decomposition of Income Gini in Mexico, Gini Elasticities, 1996 45
Table 2.9: Source Decompostion of Consumption Gini in Mexico, Gini Elasticities, 1996 46
Table 2.10: Within and Between Group Inequality for Individual Earnings, Thiel, 1995 48
Table 2.11: Earnings Inequality Decomposition for Salaried vs. Self-Employed Workers, 1995 49
Table 2.12: Inequality Simulations for Salaried vs. Self-Employed Workers, 1995 51
Table 2.13: Gini Indices of Inequality and Mobility, Rural Mexico, 1994 and 1997 52

Table 3.1: Elasticities of Poverty with Respect to Growth and Inequality in Latin America and the Caribbean 56
Table 3.2: Impact of Growth on Non-Monetary Indicators of Well-Being, Elasticities 58
Table 3.3: Returns to Schooling and Experienced for Salaried vs. Self-Employed Workers 62

Table 4.1: Impact of Years of Schooling on Extreme Poverty and per Capita Income, 1995–96 71
Table 4.2: Impact of Demographics on Extreme Poverty and per Capita Income, 1995–96 74
Table 4.3: Impact of Employment on Extreme Poverty and per Capita Income, 1995–96 75
Table 4.4: Return to Education for Urban Men 25 to 60 Years Old 77
Table 4.5: Substitution between Child Labor and Schooling and Cost of Child Labor, 1995–96 84

Table 5.1: Targeted Public Spending per Poor Person, 1994–96, Argentina and Mexico 90
Table 5.2: Elasticity to Growth of Targeted Public Spending per Poor Person 90
Table 5.3: Classifying Government and Private Risk Management Measures 92

Table 6.1: Subjective Perceptions on Expected Changes in Living Standards in Latin America and the Caribbean 109
Table 6.2: "90/10" Ratios for Enrollment Shares and per Capita Income Shares by Age Group, 1995 .. 114

LIST OF FIGURES

Figure 1.1: Headcount Indices of Poverty and Extreme Poverty in Latin America and the Caribbean, Weighted, 1986–96 17
Figure 1.2: Headcount Indices of Poverty and Extreme Poverty in Latin America and the Caribbean, Unweighted, 1986–96 17
Figure 1.3: Number of Poor and Extreme Poor in Latin America and the Caribbean, Millions, 1986–96 17
Figure 1.4: Headcount Indices of Poverty and Extreme Poverty in Latin America and the Caribbean, Urban Weighted, 1986–96 23
Figure 1.4: Headcount Indices of Poverty and Extreme Poverty in Latin America and the Caribbean, Urban Unweighted, 1986–96 23
Figure 1.4: Headcount Indices of Poverty and Extreme Poverty in Latin America and the Caribbean, Rural Weighted, 1986–96 23
Figure 1.4: Headcount Indices of Poverty and Extreme Poverty in Latin America and the Caribbean, Rural Unweighted, 1986–96 23
Figure 1.8: Headcount of Extreme Poverty in Latin America, 1996 24
Figure 1.9: Headcount of Poverty in Latin America, 1996 24
Figure 1.10: % Change, Headcount of Extreme Poverty in Latin America, 1992–96 25
Figure 1.11: % Change, Headcount of Poverty in Latin America, 1992–96 25
Figure 1.12: Human Development Index in Latin America, 1997 34

Figure 2.1: Income Inequality Measures for Latin America and the Caribbean, 1986–96, Population Weighted, National 38
Figure 2.2: Income Inequality Measures for Latin America and the Caribbean, 1986–96, Equal Country Weights, National 38
Figure 2.3: Income Inequality Measures for Latin America and the Caribbean, 1986–96, Population Weighted, Urban 38
Figure 2.4: Income Inequality Measures for Latin America and the Caribbean, 1986–96, Equal Country Weights, Urban 38
Figure 2.5: Income Inequality Measures for Latin America and the Caribbean, 1986–96, Population Weighted, Rural 38
Figure 2.6: Income Inequality Measures for Latin America and the Caribbean, 1986–96, Equal Country Weights, Rural 38
Figure 2.7: National Gini Decomposition by Source of Income Inequality, Mexico, 1996 47
Figure 2.8: National Gini Decomposition by Source of Consumption Inequality, Mexico, 1996 47
Figure 2.9: Earnings Inequality for Salaried and Self-Employed Workers, 1995 50

Figure 4.1: Average Marginal Impact of Education on Per Capita Income, 1995–96, Household Head, Urban, 12 Countries 72
Figure 4.2: Average Marginal Impact of Education on Per Capita Income, 1995–96, Spouse, Urban, 12 Countries 72
Figure 4.3: Average Marginal Impact of Education on Per Capita Income, 1995–96, Household Head, Rural, 9 Countries 72
Figure 4.4: Average Marginal Impact of Education on Per Capita Income, 1995–96, Spouse, Rural, 9 Countries 72
Figure 4.5: Average Marginal Impact of Employment on Per Capita Income, 1995–96, Household Head, Urban, 12 Countries 73
Figure 4.6: Average Marginal Impact of Employment on Per Capita Income, 1995–96, Household Head, Rural, 9 Countries 73

LIST OF BOXES

Box 1.1: Poverty Measures Rely on a Number of Methodological Assumptions 18

Box 2.1: Analyzing Source Decompositions of the Gini Index of Inequality 43
Box 2.2: The Gini Mobility Index 54

Box 3.1: Impact of Growth and Inequality on Poverty 57
Box 3.2: Impact of Mexico's Program of Cash Transfers for Farmers 68

Box 4.1: Determinants of Poverty: Categorical or Linear Regressions? 70
Box 4.2: Education, Labor Force Participation, and Wages 76
Box 4.3: Estimating the Cost of Child Labor in Terms of Future Earnings 82
Box 4.4: Modeling the Impact of Stipends on Child Labor and Schooling 87

Box 5.1: Targeted Public Spending During Economic Crises: A Framework 91
Box 5.2: Measuring the Cost-effectiveness of Public Works 97
Box 5.3: Targeting the Poor Using ROC Curves 105
Box 5.4: Targeting, Program Beneficiaries, and Allocation of Funds Among Them 106

Box 6.1: Poverty Research: Alternative Methods 112
Box 6.2: Does Consultation Improve Participation and Usage in Social Funds? 121

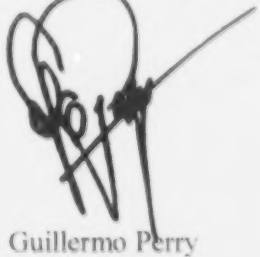
FOREWORD

Reducing poverty is the main goal of the World Bank, but progress towards this goal is not rapid enough. This report, a product of the Regional Studies Program for the Latin America and the Caribbean Region in the World Bank, provides new estimates of poverty and inequality for the period 1986 to 1996, with projections to 1998. One of every six persons lives in extreme poverty. Slightly more than one out of three is poor. Thanks to better growth, poverty is lower today than it was in the early 1990s, but it remains higher than it was in the mid 1980s. The high level of poverty in Latin America is due in part to high levels of inequality. As for poverty, inequality increased in the late 1980s, and decreased thereafter, but not enough to get back to its previous level.

While it is important and necessary to measure trends in poverty and inequality, too many efforts are devoted to this task to the detriment of the analysis of public policies. This is why beyond measurement, the bulk of the report is devoted to a review of many of the policies that have been or are currently implemented to fight poverty. This review is organized according to the framework of the World Bank's forthcoming World Development Report 2000-2001. Three essential elements are identified for the reduction of poverty: (1) opportunities, as provided among others by broad-based economic growth and investments in the human capital of the poor; (2) security, as provided by social protection systems and safety nets; and (3) empowerment, whereby the poor are given a voice, and institutions take them into consideration.

The report has many policy-relevant findings, so that only a few can be highlighted here. The elasticity of poverty to growth is found to be unitary. Growth is also found to improve non-monetary indicators, such as infant mortality, life expectancy, secondary school enrollment, adult illiteracy, and access to safe water. The cost of child labor in terms of foregone future earnings is large, and the report discusses the links between poverty and education. The report also analyzes the impact of negative macroeconomic shocks on the poor, and suggests that current safety nets do not adequately protect them. The chapter on empowerment explains why the poor, and especially the poorest, are often not reached by policies, and it shows how consultation and participation improve the performance of programs such as social investment funds. Finally, the report introduces several new techniques and tools for the analysis of poverty and well-being. One of these tools is a new index of income mobility and risk.

The report is likely to become a reference on poverty and policy issues in Latin America, and it has already been useful to inform the discussion in other regions within the World Bank as well. We hope that in coming years, we will be able to update and enrich the analysis further.



Guillermo Perry
Chief Economist
Latin America and the Caribbean Region

ABSTRACT

This report analyzes the evolution of poverty and inequality in the Latin America and the Caribbean region from 1986 to 1996, with projections to 1998. It reviews the policies which have been advocated and/or implemented to reduce poverty. And it provides a number of new research techniques. To achieve these objectives, the report combines: (a) the results of new empirical work using household surveys for 12 countries (Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, Honduras, Mexico, Paraguay, Uruguay, and Republica Bolivariana de Venezuela); (b) short theoretical developments placed in boxes, some of which introduce new research techniques; and (c) a review of the literature on issues related to poverty, inequality, and social policy in Latin America and the Caribbean, with a focus on the poverty assessments completed by the World Bank.

ACKNOWLEDGMENTS

This report was funded under a research grant from the Regional Studies Program at the Office of the Chief Economist for the Latin American and Caribbean (LAC) Region at the World Bank. Partial funding was also received from the World Bank's Thematic Group on Inequality and from knowledge management funds.

The report was written by Quentin Wodon who is solely responsible for errors and omissions. The report is based in large part on background papers authored by Quentin Wodon together with Matias Barenstein, Norman Hicks, Kihoon Lee, William Maloney, Pia Peeters, Corinne Siaens, and Shlomo Yitzhaki. Robert Ayres provided highly valuable background notes on most of the poverty assessments completed for LAC countries at the World Bank. The background papers are mentioned in the text and references, and the contributions of the members of the research team have been highlighted chapter by chapter. Support was also given by Suresh De Mel, Dileni Gunewardena, Paul Makdissi, and Walter Park. Carlos Anguizola and Winfield Swanson provided editorial assistance.

Various sections of the report were presented and discussed at a World Bank review meeting in November 1999, at World Bank seminars (LAC Chief Economist seminar in July 1999, LAC urban upgrading workshop in September 1999, and Thematic Group on Inequality seminars in September and November 1999), at the October 1999 LACEA conference in Santiago, Chile, and at the 12th Regional Seminar on Fiscal Policy in January 2000, also in Chile. The comments from participants at these meetings greatly helped for improving the report.

Special thanks are due to the peer reviewers Alain de Janvry and Elisabeth Sadoulet (University of California at Berkeley), Samuel Morley (CEPAL and IFPRI), and Miguel Szekely (Inter-American Development Bank.) Overall guidance was provided by Guillermo Perry, Chief Economist, and Norman Hicks, Lead Specialist for poverty. The views expressed in this report do not necessarily represent those of the World Bank, its Executive Directors, or the countries they represent.

EXECUTIVE SUMMARY

This report analyzes the evolution of poverty and inequality in the Latin America and the Caribbean region (LAC) from 1986 to 1996, with projections to 1998. It reviews the policies which have been advocated and/or implemented to reduce poverty. And it provides a number of new research techniques. To achieve these objectives, the report combines: (a) the results of new empirical work using household surveys for 12 countries (Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, Honduras, Mexico, Paraguay, Uruguay, and Republica Bolivariana de Venezuela); (b) short theoretical developments placed in boxes, some of which introduce new research techniques; and (c) a review of the literature on issues related to poverty, inequality, and social policy in LAC, with a focus on the poverty assessments completed by the World Bank.

The first two chapters of the report are devoted to the measurement of poverty and inequality. The next four chapters are devoted to the policies that can help in reducing poverty. In reviewing these policies, we follow the framework proposed in the forthcoming World Development Report 2000–2001. This framework identifies three essential elements for the reduction of poverty: (1) opportunities, as provided among others by broad-based economic growth (chapter 3) and investments in the human capital of the poor (chapter 4); (2) security, as provided by social protection systems and safety nets (chapter 5); and (3) empowerment, whereby the poor are given a voice, and institutions take them into consideration (chapter 6).

Before providing a more detailed summary of the findings presented in each chapter, it is worth mentioning briefly some of the main empirical results of the report:

- One of every six persons (16.1 percent of the population) was extremely poor in LAC in 1996, and one of three persons (36.7 percent) was poor. This is progress versus the early 1990s, but it is still higher than the incidence of poverty observed in the mid 1980s. Simulations for 1998 indicate the possibility of a small reduction in poverty since 1996.
- Inequality remains high, with the weighted average of the national Gini indices at 0.56 in 1996. As for poverty, inequality increased in the late 1980s, and decreased thereafter, but not to the same extent. The high inequality in LAC is due in part to the extent of self-employment, and to the high level of income mobility observed in the labor force surveys.
- The elasticity of poverty to growth is unitary. Hence a growth of 1 percent in mean per capita income results in a reduction in poverty of 1 percent. This results in a reduction of the share of the population in poverty of one third of a percentage point (1 percent of 36.7). Growth also helps in improving non-monetary indicators, such as infant mortality, life expectancy, secondary school enrollment, adult illiteracy, and access to safe water.
- Education helps to increase earnings, but it is not enough to emerge from poverty if only one person is working in the household. The returns to education have not changed much over time. There is substitution between child labor and schooling, so that the children who are working now will have lower future incomes, and thereby a higher probability of being poor.
- The high level of poverty in LAC is due in part to the negative impact of macroeconomic shocks. While safety nets should be counter-cyclical, there is evidence that they are pro-cyclical, with the poor getting hurt during crises by cuts in spending for targeted programs. Also, improvements in targeting and performance are needed for many existing safety nets.
- There is evidence that the poor are excluded, and that state institutions are not pro-poor enough. By contrast, participation can have positive effects, as demonstrated by social funds.

CHAPTER 1: WHILE SOME PROGRESS HAS BEEN MADE IN THE 1990S, POVERTY REMAINS HIGH

The first chapter of the study presents poverty measures for the 12 countries under review and for the Latin America and Caribbean (LAC) region as a whole on the basis of these countries. Table ES.1 provides the estimates for the share of the poor at the regional level.

- In 1996, slightly more than one third of the LAC population (36.7 percent) was poor (i.e., not able to afford basic food and non-food needs), and one out of every six persons (16.1 percent) was extremely poor (i.e., not able to afford basic food needs). This represents progress versus 1992 when the incidence of poverty and of extreme poverty were both higher.
- Applying these estimates of poverty obtained for the 12 countries under review to the LAC population as a whole yields 179 million poor people in 1996, of which 78 million lived in extreme poverty. Some reduction in the number of the poor and extreme poor in the 1990s is observed, but this reduction is small due to population growth. Moreover, if the comparison is made with 1986 instead of 1992, the number of the poor and extreme poor in 1996 has risen considerably in the region, by, respectively, 40 million and 20 million people.
- However, a different story emerges using non-weighted poverty measures (not shown in Table ES.1). When all countries receive the same weight independently of their population, one observes a consistent reduction in poverty throughout the period. In other words, the number of countries for which there has been progress, and the extent of the progress in these countries is larger than the number of countries for which there has been a deterioration.
- Macroeconomic shocks have plagued many LAC countries, with disastrous consequences for poverty. This is confirmed in this study in the country-level estimates of poverty. Mexico, for example, was hit by a crisis in 1995. The crisis resulted in a sharp drop in per capita GDP and consumption, and in a large increase (7 percentage points) in poverty. The same applies to Argentina and Brazil in the late 1980s. Thus, while the moderately favorable record of poverty reduction can be attributed in part to macroeconomic stabilization programs and structural reforms in many of the countries in the 1990s, other countries have continued to suffer from large negative macroeconomic shocks during the period under review.
- Projections of further poverty reduction to 1998 using estimated elasticities of poverty reduction to growth combined with the actual level growth in per capita GDP and consumption in the region suggest only limited gains in the incidence of poverty in percentage terms since 1996, with the number of the poor remaining roughly constant.

Table ES.1. Population and Number of Poor and Extreme Poor in Latin America and the Caribbean, Millions, 1986–98

Year	Population	Poverty		Extreme poverty	
		Share (%) of population poor	Number of poor	Share (%) of population extremely poor	Number of extreme poor
1986	407.38	33.75	137.49	13.32	54.26
1989	430.98	38.26	164.89	17.59	75.81
1992	454.65	39.65	180.27	18.65	84.79
1995	478.21	36.92	176.56	15.94	76.23
1996	486.06	36.74	178.58	16.10	78.26
1998a (*)	501.87	35.27	177.00	15.21	76.33
1998b (*)	501.87	35.83	179.84	15.55	78.05

Source: Own estimates. (*) Estimates for 1998 are projections based on the estimated elasticity of poverty reduction to growth and the observed growth in per capita GDP (1998a) and per capita consumption (1998b) for 1997 and 1998.

Even though relatively little progress has been achieved towards poverty reduction, the LAC region has improved over time in other dimensions of social welfare (Table ES.2). The rate of adult illiteracy in LAC has decreased from 16.3 to 12.2 percent between 1985 and 1995. The gross secondary school enrollment rate has increased from 47.7 to 52.9 percent between 1987 and 1995. Although this remains low by international standards, LAC is making progress. The rate of infant mortality has decreased from 44.1 to 29.9 percent between 1987 and 1997. The life expectancy at birth has increased from 67.5 to 69.7 years from 1987 to 1997. The access to safe water has increased from 75.8 to 83.4 percent from 1985 to 1993. Nutrition indicators, such as the incidence of stunting (not shown in Table ES.2), have also improved.

Table ES.2. Non Monetary Indicators of Well-Being in Latin America and the Caribbean, 1985–97

	1985	1987	1988	1990	1992	1993	1995	1997
Infant mortality (per 1,000)	-	44.07	-	39.02	35.64	-	-	29.94
Life expectancy at birth (years)	-	67.49	-	68.17	68.63	-	-	69.74
School enrollment, secondary (% gross)	-	47.70	-	47.83	49.72	-	52.85	-
Safe water (% of population with access)	75.83	-	82.37	-	-	83.40		-
Adult illiteracy (% of people 15+)	16.33	-	-	13.72	-	-	12.19	-

Source: Own estimates from World Bank SIMA data.

Poverty tends to be higher in rural than in urban areas. Table ES.3 suggests that the incidence of extreme poverty is three times higher in rural than in urban areas.[1] For poverty, the incidence is twice higher in rural than in urban areas. The higher levels of rural poverty and extreme poverty in LAC justify a pro-rural bias for poverty alleviation in many countries. However, with 75 percent of the LAC population being urban, the absolute numbers of the extreme poor are about the same in rural and urban areas, and the absolute number of the poor is a bit larger in urban areas.

Table ES.3. Urban and Rural Poverty in Latin America and the Caribbean, 1986–96

	Urban areas		Rural areas	
	Share (%) of population extremely poor	Share (%) of population poor	Share (%) of population extremely poor	Share (%) of population poor
1986	9.52	25.51	25.93	57.43
1989	12.77	30.62	31.16	59.79
1992	13.46	32.01	37.64	67.58
1995	11.65	30.14	33.30	64.14
1996	11.83	30.03	33.01	63.33

Source: Own estimates.

[1] While all 12 countries are represented for the urban poverty estimates, only half of the countries have their rural population covered in the surveys for the whole period in review. Therefore the coverage of the rural population is lower than that of the urban population. However since both Brazil and Mexico have national surveys, the coverage of the sample for rural areas remains high as a percentage of the LAC rural population. Note that in 1996, four more countries in our sample have national surveys and therefore coverage in rural areas--Bolivia, Colombia, Paraguay, and Uruguay—but this is not used here in order to provide a consistent sample of countries over time for the rural poverty trend. The estimates in Table ES.2 are obtained using the same poverty line for urban and rural areas. But even if one assumes that the cost of basic non-food needs is lower in rural areas, so that following standard practice in LAC the moderate poverty line in rural areas is set equal to 1.75 times the extreme poverty line (versus a multiplier of 2 for the moderate poverty line in urban areas), the differences in poverty remain large.

CHAPTER 2: INCOME INEQUALITY IS HIGH, AND THE REPORT SUGGESTS A FEW REASONS WHY

It is well known that income inequality is high in LAC. High levels of inequality contribute to high levels of poverty in several ways. First, at any given level of economic development, higher inequality implies higher poverty since a smaller share of total income is obtained by those at the bottom of the distribution. Second, higher inequality today may reduce future growth, and thus affect future poverty reduction. Third, higher levels of inequality may reduce the benefits of growth for the poor (if a single person has all the resources, then whatever the growth, poverty will never be reduced through growth). Moreover, independently of its impact on poverty, inequality has a direct negative impact on welfare. According to the relative deprivation theory, individuals do not assess their levels of welfare only with respect to their absolute levels of consumption or income. They also compare themselves with others. Thus, for any given level of income, high inequality has a direct negative impact on welfare.

As discussed in chapter 2, inequality has increased further in the region between 1986 and 1996. Most of the increase took place between 1986 and 1989, as indicated in Table ES.4, which provides various measures of income inequality (population weighted) within country inequality for the region. As for poverty, the population-weighted changes in inequality in LAC reflect in part the weight of Brazil and Mexico where inequality increased between 1986 and 1989, and then receded only partially. With equal country weights (not shown in Table ES.4), there is no clear pattern towards an increase or decrease in inequality over time: the outcome depends upon the measure used. Also, not surprisingly, inequality is higher in urban than in rural areas, and higher at the national level than in either urban or rural areas (because the national level estimates take into account the inequality between rural and urban areas in the countries that have national coverage).

Table ES.4. Income Inequality Measures in Latin America and the Caribbean, 1986–96

	Region			Urban areas			Rural areas		
	Theil	Gini	Atkinson	Theil	Gini	Atkinson	Theil	Gini	Atkinson
1986	0.59	0.54	0.47	0.55	0.52	0.46	0.48	0.49	0.39
1989	0.73	0.58	0.52	0.68	0.56	0.50	0.57	0.52	0.42
1992	0.62	0.55	0.51	0.57	0.53	0.49	0.53	0.51	0.45
1994	0.65	0.56	0.51	0.61	0.55	0.49	0.53	0.50	0.43
1996	0.65	0.56	0.52	0.61	0.55	0.50	0.54	0.51	0.44

Source: Own estimates, not taking into account between-country inequality.

Source decompositions of the Gini index of inequality indicate that in absolute terms, most of the inequality in per capita income is due to labor income simply because labor income represents a large share of total per capita income (moreover, most surveys in LAC are labor force surveys which include a limited number of sources of income). Wages and salaries and labor income from self-employment together account for three fourths of the Gini for total per capita income. The rest of inequality is related to pensions, transfers, income from capital, and other sources. For policy purposes however, it is the marginal rather than the absolute contribution of an income source to inequality that matters. At the margin, a small increase in wages and salaries from a primary occupation is inequality neutral or slightly inequality reducing. By contrast, labor income from a secondary occupation and from self-employment are inequality increasing. This suggests that households with members having a secondary occupation and/or self-employment earnings are better off on average than households with

members having earnings only from one primary salaried occupation. Pensions tend to be inequality increasing, although there are a few exceptions. Transfers tend to be inequality decreasing. Income from capital is inequality increasing. In terms of the changes in progressivity or regressivity of income sources over time, no trend can be found for labor and capital income. But pensions have become more inequality increasing over time (a worrying trend), while transfers have become more inequality reducing (a welcomed trend).

Chapter 2 also goes into some detail in the analysis of self-employment as a driver of wage (and hence per capita income) inequality. Table ES.5 provides a group decomposition of the Theil index for six countries circa 1995. The measures are estimated for the sample of male individuals in the surveys who have positive earnings. While the exact level of wage inequality depends on the country, inequality is up to twice as high among self-employed individuals than salaried workers. If the level of self-employment in LAC countries were similar to that encountered in most OECD countries, at about 10 percent versus an average of more than 30 percent in LAC, the within-group component of the inequality indices would be much lower (because within group inequality is lower among salaried workers), and the inequality indices for LAC would also be lower. Several factors explain why inequality is higher among the self-employed than among salaried workers. First, self-employment is a risky venture that magnifies earnings inequality. In a regression framework, risk is captured by the residuals. Next, the returns to education tend to be higher among the self-employed (which is what economic theory predicts). Third, the returns to experience are also higher for the self-employed, although this impact is smaller than those of risk and education.

Table ES.5. Earnings Inequality Decomposition for Salaried vs. Self-Employed Workers

	Argentina	Bolivia	Chile	Colombia	Uruguay	Venezuela, RB de
	Inequality measure for all workers with non zero wages					
Theil index	0.362	0.642	0.735	0.667	0.398	0.340
	Inequality measure for all self-employed workers with non zero wages					
Theil index	0.484	0.819	0.867	0.972	0.499	0.470
	Inequality measure for all salaried workers with non zero wages					
Theil index	0.295	0.430	0.411	0.433	0.350	0.264
	Within and between group inequality, with groups defined by type of employment					
Within group	0.355	0.642	0.639	0.653	0.395	0.340
Between group	0.007	0.001	0.096	0.013	0.004	0.000

Source: Own estimates.

Another reason for high inequality in LAC has to do with income mobility. In LAC countries, income inequality is typically measured through labor force surveys. If income is measured for, say, one month only, and if there is a lot of variation in income from month to month (especially for the self-employed), then inequality measures relying on the snapshots available in the labor force surveys will tend to overestimate the underlying inequality that exists on a yearly basis. In other words, inequality measures not taking mobility into account tend to overestimate the extent of inequality. Using panel data for urban Mexico (and Argentina), it can be shown that the extent of income mobility is very high in LAC countries, so that income inequality measures are indeed overestimated. It is also worth noting that income mobility indices are higher for the young than for the old. They are higher for the less well-educated (primary level) than for the better educated (secondary or higher). There are no differences according to headship. Regression estimates to assess the determinants of mobility confirm the role of age and education, as well as the role of economic growth in increasing mobility.

Finally, according to conventional wisdom, education is a key driver of inequality. This is because household inequality is strongly related to earnings, which represent the bulk of household income. And earnings inequality itself is in large part due to the unequal distribution of schooling, which affects both the probability to work and the expected wages when working. Moreover, differences in schooling also influence fertility rates and family structure, which have a strong impact on per capita income. Inequality decompositions by group confirm that education is a key driver of earnings inequality. As already mentioned, the high level of self-employment in LAC may contribute to higher returns to education than elsewhere. At the same time, however, statistical decompositions of inequality indices tend to overstate the impact of education on earnings inequality since statistical decompositions suffer from omitted variable bias (they do not take into account the correlation between education and other variables affecting income inequality). Even when regressions are used to estimate the contribution of education to inequality, omitted variable bias tends to persist. In other words, the role of education as a driver of inequality, while large, may be overstated.

Chapter 3: While growth improves well-being, it is not broad-based enough

There is clearly a strong association between economic growth and poverty reduction. One way to look at the impact of growth on poverty reduction is to examine poverty levels according to economic development as measured by per capita GDP in U.S. dollars. The richer countries—such as Argentina, Chile, and Uruguay—have levels of total (extreme plus moderate) poverty between 15 and 30 percent for the headcount index. Brazil and Mexico follow, with levels of poverty between 30 and 40 percent. Columbia, the Dominican Republic, Ecuador, Paraguay, and Republica Bolivariana de Venezuela tend to have poverty levels between 40 and 60 percent. The two poorest countries in the sample, Bolivia and Honduras, have poverty levels above 60 percent.

Another way to look at the impact of growth on poverty is to compute elasticities of poverty reduction to growth. This was done by using the panel data on poverty, inequality, and mean income generated at the country level in the study. Denoting by γ and λ the gross and net elasticities of poverty reduction to growth, by β the elasticity of inequality to growth, and by δ the elasticity of poverty to inequality controlling for growth, it can be shown that $\lambda \approx \gamma + \beta\delta$. The results (based on a total of 72 observations, i.e. 12 countries with 6 years per country) are provided in Table ES.5. For example, without changes in inequality (as measured by the Gini index), a 1 percent increase in per capita income results at the regional level in a –0.94 percent (γ) decline in the headcount index of poverty. With a regional headcount for poverty at 36.7 percent in 1996, this represents one third of a percentage point decline in the share of the population in poverty (36.7*–0.0094 = –0.34). This is the gross impact of growth on the headcount index of poverty. The net impact (λ) is basically the same because the elasticity of inequality to growth (β) is almost zero. Note also that the elasticities of poverty to inequality (δ) are larger for the poverty gap and squared poverty gap because these measures are more sensitive to inequality among the poor. Note also that the elasticities of poverty to growth are larger for extreme poverty than for poverty. Yet since these are elasticities, growth can generate larger reductions in percentage points in the headcount index of poverty than in the headcount index of extreme poverty. This is actually the case because poverty measures are larger than extreme poverty measures.

Table ES.6. Elasticities of Poverty with Respect to Growth and Inequality in Latin America and the Caribbean

	Poverty	Extreme poverty
Net elasticity of poverty to growth (λ)	-0.94	-1.30
Gross elasticity of poverty to growth (γ)	-0.93	-1.27
Elasticity of poverty to inequality (δ)	0.74	1.46
Elasticity of inequality to growth (β)	NS	NS

Source: Own estimates. NS denotes an elasticity not significantly different from zero at the 5 percent level (the estimate of the elasticity of inequality to growth is -0.02).

Apart from reducing poverty, growth also helps improve non-monetary indicators of well-being. As indicated in Table ES.7, economic growth improves indicators of infant mortality, enrollment in secondary education, illiteracy, access to safe water, and life expectancy. The table provides estimates of the elasticities of these indicators to growth at various levels of economic development as captured by the level of real per capita GDP in U.S. dollars of 1985 (PPP). For example, for countries with a real per capita GDP below $2,500 at 1985 prices, a 1 percentage point in growth results in a 0.62 percentage point decrease in infant mortality. The impact of growth on infant mortality increases as the level of GDP increases, up to the level of $15,000 at which no more gains in infant mortality are obtained. While the exact magnitude of the elasticities depends on the social indicator and the level of development of the country, there is no doubt that economic growth is associated with strong non-monetary benefits.

Table ES.7. Impact of Growth on Non-Monetary Indicators of Well-Being, Elasticities

	Infant mortality	Secondary education	Illiteracy	Access to safe water	Life expectancy
RGDP <2500	-0.62	1.25	-0.68	0.98	0.15
2500<=RGDP<5000	-1.10	0.74	-1.06	0.47	0.13
5000<=RGDP<10000	-1.25	0.79	-0.66	NS	0.07
10000<=RGDP<15000	-1.90	0.80	NS	NS	0.14
RGDP>=15000	NS	NS	NS	NS	NS
Constant	4.67	2.37	3.86	3.31	3.96

Source: Own estimates. NS denotes an elasticity not significantly different from zero at the 5 percent level. RGDP = real per capita GDP in U.S. dollars of 1985 (PPP). The data used cover the whole world, not only LAC.

Without growth, the likelihood of reducing poverty is slim. At the same time, the growth process in LAC has not been broad-based enough, so that it has not benefited the poor as much as it could have. Various forces are at work in urban and rural areas:

- In urban areas, one implicit argument in many poverty studies is that the failure to attain broad-based growth is related to the inadequate functioning of factor markets in the region. Chapter 3 considers one of the issues in labor markets, namely the rise in informal employment. Most observers consider that the informal sector is generating poverty. Yet the debate is complex due to the heterogeneity of the informal sector. The sector may contain pockets of thriving entrepreneurial activity, and it may be the sector of choice for some workers. For example, some people may be willing to accept lower wages in return for flexibility. As for the lack of participation in social security systems, it could be for some a rational decision if the taxes paid in the formal sector do not yield long-term benefits.
- In rural areas, the poor lack access to land, credit, and other assets. On these issues, chapter 3 reviews some of the literature. Land-titling programs and market-based land reforms have the potential to help the rural poor. On the other hand, the experience in government programs to target subsidized credit to the rural poor has been mixed. Another potential area

of intervention for the rural poor is the promotion of non-farm employment. The chapter also discusses the impact of cash transfer programs on rural income using the experience of Mexico's Procampo.

CHAPTER 4: EDUCATION HELPS, BUT IT IS NOT ENOUGH. CHILD LABOR IMPLIES LARGE COSTS

Education has a direct positive impact on per capita income and on the probability of being poor. In addition, education has important indirect impacts through: a) demographics (a better education typically reduces the number of children in a household, and thereby the probability of being poor since larger households tend to be poorer); and b) employment (a better education improves the probability of being employed and the quality of employment). Apart from a poverty profile and regressions for the determinants of household per capita income, chapter 4 provides regressions for the determinants of individual labor force participation and wages. Again, and as expected, education is found to have a large impact on expected earnings and on the probability to work. Yet, having only one adult male family member working is not sufficient for most households to emerge from poverty in the prevailing economic conditions, even if that member is well educated. In other words, more than one person per household must work if the household is to be non-poor. This explains why in poverty assessments and other studies, there is an emphasis on improving employment and earnings opportunities for women. Importantly, the individual level labor income regressions (for men) suggest that the returns to education are increasing with the years of schooling, and that they have remained stable over time. This later result may come to a surprise for those arguing that the move towards more open economies together with technological progress have led to a premium in the wages paid to the best educated. (However, more work is needed on this topic in order to reach a conclusion.)

Table ES.8. Return to Education for Urban Men 25 to 60 Years Old, by Years of Schooling

	Schooling	Argentina	Bolivia	Colombia	Paraguay	Venezuela	Honduras	6 countries	Change
1986	6	4.3	-0.4	12.8	10.9	6.4	14.9	8.2	
	9	7.8	4.2	14.0	12.1	8.8	13.1	10.0	
	12	11.2	8.7	15.1	13.2	11.2	11.3	11.8	
	15	14.7	13.2	16.2	14.3	13.7	9.5	13.6	
1996	6	6.9	4.0	6.3	9.5	5.1	9.2	6.8	1.3
	9	8.3	7.2	9.6	10.8	6.7	10.7	8.9	1.1
	12	9.6	10.3	12.8	12.1	8.2	12.2	10.9	0.9
	15	11.0	13.5	16.1	13.3	9.7	13.7	12.9	0.7

Source: Own estimates.

Chapter 4 also analyzes child labor, a growing concern in recent years. The main contribution consists in analyzing the determinants of (paid) child labor and school enrollment in a number of countries, and thereafter in estimating the cost of child labor in terms of foregone life-time earnings. These costs arise because of the substitution effect between child labor and schooling, and because of the lower future stream of income enjoyed by the children who have quit school in order to work at a young age. Table ES.9 provides the key results. The substitution effects are relatively large, with the probability of going to school decreasing by quite a margin in case of child labor. The costs are also high, representing on average 8.5 percent of a child's future earnings (the exact loss depends on the country, the sample, and the location). An alternative way to suggest the magnitude of the cost of child labor is to divide this

cost by the annual poverty line, yielding an equivalent number of years out of poverty that could be hoped for by the child if he/she was not working. Table ES.9 indicates that this measure varies from 0.3 to 8.6 "poverty years," with a mean value of 3.45 years. To discourage child labor and promote schooling, governments fund programs that reduce the opportunity cost of schooling. The last section of the chapter on human capital reviews some of these policies.

Table ES.9. Substitution between Paid Child Labor and Schooling, and Cost of Child Labor

	Urban boys	*Urban girls*	*Rural boys*	*Rural girls*	*Urban boys*	*Urban girls*	*Rural boys*	*Rural girls*
	Bolivia				Colombia			
Probability school if work	0.74	0.65	0.32	0.19	0.43	0.42	0.32	0.34
Probability school if no work	0.97	0.97	0.77	0.64	0.94	0.93	0.82	0.80
Difference in probability (1)	0.24	0.32	0.45	0.45	0.50	0.51	0.50	0.46
Difference in income (2)	2.31%	6.26%	18.69%	34.99%	8.27%	8.28%	5.30%	38.04%
Cost of child labor (1)*(2)	1.67%	1.99%	19.40%	15.75%	4.17%	4.19%	2.64%	17.57%
Cost in poverty years	0.27	0.33	2.43	1.97	2.81	1.93	1.42	2.34
	Dominican Republic				Mexico			
Probability school if work	0.78	0.75	0.61	0.04	0.58	0.50	0.29	0.33
Probability school if no work	0.96	0.97	0.95	0.95	0.91	0.84	0.90	0.66
Difference in probability (1)	0.18	0.21	0.34	0.83	0.34	0.35	0.62	0.33
Difference in income (2)	8.21%	22.30%	7.78%	37.59%	12.74%	34.63%	17.57%	54.02%
Cost of child labor (1)*(2)	1.47%	4.78%	2.66%	31.09%	4.27%	12.04%	10.84%	17.65%
Cost in poverty years	1.86	1.95	3.00	5.57	3.85	8.41	6.83	1.61
	Paraguay				Venezuela, R.B. de			
Probability school if work	0.73	0.45	0.55	0.33	0.46	0.40	0.26	0.13
Probability school if no work	0.92	0.88	0.76	0.67	0.91	0.93	0.83	0.80
Difference in probability (1)	0.19	0.43	0.21	0.34	0.45	0.53	0.57	0.67
Difference in income (2)	17.50%	15.33%	20.80%	20.78%	8.39%	13.93%	9.89%	20.23%
Cost of child labor (1)*(2)	3.24%	6.61%	4.45%	7.01%	3.81%	7.40%	5.65%	13.64%
Cost in poverty years	4.86	6.98	3.59	8.55	2.15	2.89	2.52	4.79

Source: Own estimates.

CHAPTER 5: SAFETY NETS ARE LARGELY PRO-CYCLICAL AND INSUFFICIENT IN THEIR SCOPE

Chapter 5 is devoted to social protection systems and safety nets. It has been noted earlier that macroeconomic shocks have plagued LAC countries with serious consequences for the poor not only in the short run, but also in the long run. Economic crises are so-called covariant shocks which affect real incomes through a reduction in both real wages (via inflation) and hours worked (via unemployment or underemployment). Beyond income effects, which may vanish within a few years, crises can also have longer term consequences. Reductions in the quantity and quality of public health care due to budgetary pressures may induce irreparable damage for children. And when coping with a crisis, parents may send their children to work. If this induces substitution with schooling, the children may incur long-term economic losses. Safety nets are needed to protect the poor from macroeconomic shocks. They also have a role in normal times, when the poor can be affected by idiosyncratic as opposed to covariant shocks.

In principle, safety nets should be counter-cyclical. But in practice, it is difficult to protect targeted public spending for the poor during crises because during a recession, several forces combine to put downward pressure on the amount of public transfers per poor person. First, as noted by critics of structural adjustment mechanisms, the share of GDP devoted to

public spending may decrease in order for fiscal restraint to restore macroeconomic fundamentals. Second, GDP itself is by definition reduced during a crisis, so that even if the share of GDP devoted to public spending remains constant, there will still be fewer resources available for the poor. These two factors tend to make aggregate targeted public spending for the poor pro-cyclical rather than counter-cyclical. Third, poverty increases during a crisis, so that the available aggregate resources targeted to the poor have to be distributed among a larger pool of applicants, yielding lower spending per poor person. As shown in table ES.10 based on data from seven Latin American countries, the share of total public spending in GDP tends to remain constant over time (the elasticity is not statistically significant), and the same is observed for the share of targeted spending in GDP. The share of social spending in total spending tends to increase during expansions (which is good for the poor if they benefit from social spending), and not decrease during recessions (which suggests at least some willingness to protect the poor). One implication of these findings is that during a recession, despite some willingness to protect the poor, a 1 percentage point decrease in per capita GDP leads to a 2 percentage point decrease in targeted public spending per poor person. Half of the impact is due to the reduction in per capita GDP which reduces spending even though the share of targeted spending in GDP remains constant. The other half comes from the increase in the number of poor people due to the crisis.

Table ES.10. Elasticity to Growth of Targeted Public Spending per Poor Person

	Expansion	Recession
Unitary elasticity of per capita growth to itself	1.00	1.00
Elasticity to growth of total spending as a share of GDP	NS	NS
Elasticity to growth of social spending as a share of total spending	0.69	NS
Elasticity to growth of targeted spending as a share of social spending	NS	NS
Minus the elasticity to growth of the headcount index of poverty	0.94	0.94

Source: Own estimates. NS indicates elasticities which are not statistically significant at the 5 percent level. The estimates are based on data for seven countries.

Chapter 5 reviews the main types of programs that have been advocated to protect the poor from covariant and/or idiosyncratic economic shocks. Temporary public works program providing earnings at or below minimum wages (to ensure self-selection) have been expanded to reduce unemployment. In Argentina, this has done in urban areas through the Trabajar program. In rural Mexico, the Empleo Temporal program has worked as a buffer against off-season rural unemployment. Unfortunately, the cost of generating US$1 in additional income for the poor through public works is typically high, at US$3 or more. The share of the funds resulting in earnings gains for the poor is a function of four parameters: the proportionate wage gain for program participants, the targeting performance of the program, the wage share of the program, and the budget leverage of the program. Some policy rules can help in increasing the value of these parameters so that a larger share of public spending benefits the poor quickly.

With changing labor markets, some LAC countries have invested in retraining programs for urban workers. This is the case with Mexico's Probecat. The program was implemented in 1986 as a response to the growth in unemployment that followed the 1982 debt crisis and the subsequent structural adjustment policies. Today, the program provides training for close to 500,000 beneficiaries per year. A new evaluation of the program suggests however that it does not have a statistically significant impact on employment and wages. These disappointing results are not that surprising since most retraining programs in OECD have been found to have limited impacts. One reason for this may be that the training is provided for too short a period of time (a few months) in order to provide skills valuable in the long run. Some job training programs may

in fact function as safety nets providing temporary relief for the unemployed with a self-targeting mechanism not unlike that of public works programs since participants typically receive only the minimum wage. It is probably better to choose one goal or the other (training versus social protection), rather than trying to meat both goals with a single program. But, even if a decision is made to favor training over social protection during normal times, training programs can be still extended and modified to serve as safety nets during crises if this is deemed necessary.

Beyond work fare and training, many other safety net programs have been implemented in LAC. This includes food subsidies, food stamps, and food baskets distributed to vulnerable groups such as households with babies, pregnant women, and elderly members. It also includes unemployment insurance and severance payments, emergency social funds, etc. There has been a tendency to reduce funding for food subsidies in order to fund other programs. This tendency can again be illustrated with the policy changes implemented in Mexico where universal price subsidies for the consumption of tortilla have been terminated in the first few months of 1999, and more funds have been channeled for programs improving the human capital of the poor such as Progresa in rural areas and for the reduction of social security taxes on low-income workers in urban areas. Progresa is especially interesting in that it is part of a new generation of programs aiming at providing integrated support at the household level for education, health, and nutrition.

Two conclusions on safety nets that emerge from a review of poverty assessments is that the coverage of the programs is too limited and that the targeting should be improved (which can help for coverage without increasing costs). However, choosing an optimal targeting policy is a complicated matter because of the large number of factors to be taken into account, including the behavioral responses of poor and non poor households to targeted programs, the administrative costs of programs, the availability of different alternative indicators to target the poor, and the political economy. The chapter presents two simple tools that can be used to analyze and improve targeting. The first tool deals with the evaluation of alternative targeting indicators for proxy means-testing using ROC (Receiving Operating Characteristics) curves. The second tool deals with decomposing the impact on welfare of the targeting of beneficiaries on the one hand, and the allocation of funds among beneficiaries in a differentiated way on the other hand.

CHAPTER 6: STATE INSTITUTIONS COULD SERVE AND EMPOWER THE POOR BETTER

The comparative advantage of the first five chapters of this report lies in the use of quantitative methods for the analysis of objective indicators of well-being and the evaluation of public policies. But this does not cover the whole range of issues related to poverty.

- In terms of scope, this report does not analyze subjective indicators of well-being. Yet these are important. For the very poor, it is not necessarily material deprivation that is the most difficult to bear: social exclusion may be more difficult to accept. The realization that the poorest are often not recognized, and do not feel recognized as worthy members of our societies calls for a partnership with them to restore their dignity.
- In terms of methods, this report relies mainly on quantitative as opposed to qualitative, and positive as opposed to normative research. Yet qualitative analysis can provide valuable insights, and beyond the positive analysis of what is, the normative analysis of what ought to be is needed to motivate action.

- Finally, in terms of focus, the report deals with poverty as opposed to extreme poverty. There is a fine line between poverty and extreme poverty. Policies that may be effective for the poor may not work for the poorest. This is not discussed either in this report.

Without filling all the gaps, chapter 6 discusses some of the issues not covered by the previous chapters, with a focus on whether state institutions are sufficiently pro-poor. The analysis is based on the sectors of education and health, as well as the experience of social funds.

The chapter first confirms that the poor lack access to all levels of education except primary schooling. The inequality in school enrollment increases as children get older and schooling levels rise. To improve access to schooling for the poor, public expenditures on education could be redistributed from the tertiary to lower levels. In so doing, both demand- and supply-side education policies must be balanced. On the demand side, reductions in the opportunity cost of schooling could be obtained by giving stipends to poor families provided they send their children to school. This is the case with, for example, Mexico's Progresa, Brazil's Bolsa Escola, and Honduras' PRAF programs (these programs are briefly discussed in chapter 5). On the supply side, the low quality of education services provided to the poor remains a concern. Interventions are also needed at the supply-side to solve problems such as the non-attendance of teachers at classes, the lack of books and other curricular materials, the dilapidated educational infrastructure, etc. (The non-poor frequently have recourse to private education in order to escape the deficiencies of the public school systems.) Improving the management of public education at the administrative level is also a priority, because in some countries ministries of education tend to be highly centralized, unresponsive to client concerns, poorly staffed, and averse to risks and innovation. In this respect, decentralization and local school autonomy could lead to improvements in educational quality.

Many of the comments made for the education sector can also be made for the health sector. The poor rely on public health services, which are not always available, especially in rural areas. In contrast, some of the non-poor have access to health care from private sources. While public expenditures tend to be better distributed for health than for education, there are some countries in which health expenditures are largely regressive. Beyond access, as for education, there is substantial documentation for the lack of quality in health care for the poor. Decentralizing service provision and building local management capacity are seen as promising alternatives. Another tendency identified is the introduction of greater competition among service providers. There is also a lack of emphasis on preventive, as opposed to curative care. Most countries in the region spend far more on hospital-based curative care than on preventive outpatient care. Finally, improving the management of public health services should also be a goal, but incentive structures work against the provision of services to the poor.

The chapter also discusses how social funds have helped the poor. The first social investment fund was established in Bolivia. Since then, the experience has been generalized in many LAC countries. Poverty assessments point to several positive features of social investment funds and similar programs: (a) an emphasis on rural areas, where the majority of the poor live; (b) a demand-driven orientation, in order for the projects to be in tune with local needs and allow experimentation with new ideas; and (c) a separation between financing and implementation entities, i.e., local bodies, non-governmental organizations, and private contractors. In terms of empowerment, a study for the Honduras social fund analyzed whether the households that were consulted about the social fund projects prior to their implementation in the community were

more likely to contribute (in cash or in kind) to this implementation and to use the facilities once they have been installed. The study found that consultation before the implementation increased the probability of contribution. In turn, participation in the implementation increased the use of the facilities once completed. These results suggest that consultation of the potential beneficiaries of a project may improve outcomes, since outcomes (such as an increase in school enrollment or a decrease in the incidence of illnesses) depend on the usage of the facilities provided. The chapter also briefly discusses the issues of the targeting of social funds, the role of social capital, and the question of whether indigenous population are well served by Government programs, pointing to some of the literature on these topics.

CHAPTER I: POVERTY

Income Poverty Remains High in Latin America Despite Progress in the 1990s

According to household surveys for 12 large countries representing 71 percent[1] of the region's population, poverty affected a third of the LAC population in 1996. Extreme poverty, defined as the inability to pay for food needs, affected one of every six people. Using per capita income-based poverty measures adjusted to per capita consumption in the National Accounts to correct for underreporting,[2] it is estimated that 36.74 percent of the LAC population was poor in 1996 (first column "H" for headcount index in Table 1.1; see Box 1.1 for methodological details and for a definition of "H," "PG," and "SPG"). The proportion of the population with per capita income below the extreme poverty line was 16.10 percent in 1996. These estimates are obtained as the population weighted average of poverty measures computed in each of the 12 countries using the countries' household surveys unit level data. Whether these results for 1996 are encouraging or not depends on one's time horizon:

- The headcount indices of poverty observed in 1996 are lower than those observed in 1992, which suggests progress in the 1990s. This progress is due in part to Brazil where poverty reduction has been substantial between 1992 and 1996. The progress would have been stronger without the 1995 crisis that hit Mexico, where a dramatic increase in poverty was observed in 1996. Still, despite the progress achieved in the 1990s, the shares of the population living in poverty and extreme poverty in 1996 remain higher than those observed in 1986 (at 33.75 and 13.32 percent, respectively). This indicates that the economic recovery in many LAC countries in the 1990s and the associated reduction in the incidence of poverty have not been large enough to compensate for the "lost decade" of the 1980s (Figure 1.1).
- A somewhat different pictures emerges using non-weighted poverty measures in which countries such as Honduras or Paraguay receive the same weight as countries such as Brazil or Mexico. As indicated in Table 1.2 and Figure 1.2, when all countries receive the same weights, one observes a more consistent reduction in poverty throughout the period in review. In other words, the number of countries for which there has been progress (and the extent of this progress) is larger than the number of countries for which there has been a deterioration. But again, the reduction in the magnitude of the poverty measures is rather limited.

---

[1] The countries in the sample represent almost 90 percent of the LAC population, but some countries have surveys with partial representation only, so that the actual share of the population covered by the surveys is 71 percent.

[2] Poverty measurement is complex. Poverty measures depend on methodological choices, and different choices are made by different authors and/or in different countries. This chapter does not review the methods used in previous studies devoted to LAC countries or the LAC region. These studies include Londono and Szekely (1997), Mejia and Vos (1997), Psacharopoulos et al. (1997), Ganuza, Taylor, and Morley (1998), CEPAL (1999), and Szekely et al. (1999). For country-specific studies, the reader is referred to the poverty assessments prepared by the World Bank for these countries. Poverty assessments have been completed for the following countries: Argentina (World Bank, 1995a, 1999c), Bolivia (World Bank, 1996a), Brazil (World Bank, 1995b), Caribbean countries (World Bank, 1996b), Chile (World Bank, 1997a), Columbia (World Bank, 1994a), Costa Rica (World Bank, 1997b), Dominican Republic (World Bank, 1995c), Ecuador (World Bank, 1995d), El Salvador (1994b), Guatemala (World Bank, 1995e), Guyana (World Bank, 1994c), Haiti (World Bank, 1998a), Honduras (World Bank, 1994d), Jamaica (World Bank, 1994e), Mexico (World Bank, 1999a), Nicaragua (World Bank, 1995f), Panama (World Bank, 1999b), Peru (World Bank, 1998b), Trinidad and Tobago (1995g), Uruguay (World Bank, 1993), and Republica Bolivariana de Venezuela (World Bank, 1991).

Table 1.1. Poverty Measures for Latin America and the Caribbean, Population-Weighted Average, 1986–96

	Poverty			Extreme poverty		
	Headcount	Poverty Gap	Squared Poverty Gap	Headcount	Poverty Gap	Squared Poverty Gap
1986	33.75	14.84	9.06	13.32	5.94	4.05
1989	38.26	18.18	11.54	17.59	8.02	5.24
1992	39.65	19.20	12.60	18.65	9.10	6.36
1995	36.92	17.00	10.63	15.94	7.20	4.87
1996	36.74	16.93	10.72	16.10	7.38	5.09

Source: Own estimates.

Table 1.2. Poverty Measures for Latin America and the Caribbean, Average with Equal Country Weights, 1986–96

	Poverty			Extreme poverty		
	Headcount	Poverty Gap	Squared Poverty Gap	Headcount	Poverty Gap	Squared Poverty Gap
1986	43.63	22.34	15.22	21.98	11.44	8.40
1989	43.76	21.67	14.36	21.01	10.48	7.41
1992	42.34	20.46	13.27	19.73	9.38	6.53
1995	42.82	20.26	12.80	19.30	8.73	5.85
1996	40.25	18.49	11.60	17.34	7.86	5.38

Source: Own estimates.

Applying the estimates of poverty valid for the 12 countries to the LAC population as a whole yields 179 million poor people in 1996, of which 78 million lived in extreme poverty. Table 1.3 provides estimates for the total number of the poor and extreme poor from 1986 to 1996 using the population-weighted measures of poverty obtained for the 12 LAC countries. Some reduction in the number of the poor and extreme poor in the 1990s is observed, but this reduction is small due to population growth. If the comparison is made with 1986, the number of the poor has risen considerably. In 1996 there were 40 million more poor people than in 1986. The increase over time in the number of the poor and the extreme poor in LAC is illustrated in Figure 1.3.

Table 1.3. Population and Number of Poor and Extreme Poor in Latin America and the Caribbean, Millions, 1986–96

		Poverty		Extreme poverty	
	Population	Headcount	Number of poor	Headcount	Number of extreme poor
1986	407.38	33.75	137.49	13.32	54.26
1989	430.98	38.26	164.89	17.59	75.81
1992	454.65	39.65	180.27	18.65	84.79
1995	478.21	36.92	176.56	15.94	76.23
1996	486.06	36.74	178.58	16.10	78.26

Source: Own estimates.

Figure 1.1: Headcount Indices of Poverty and Extreme Poverty in Latin America and the Caribbean, Weighted, 1986-96

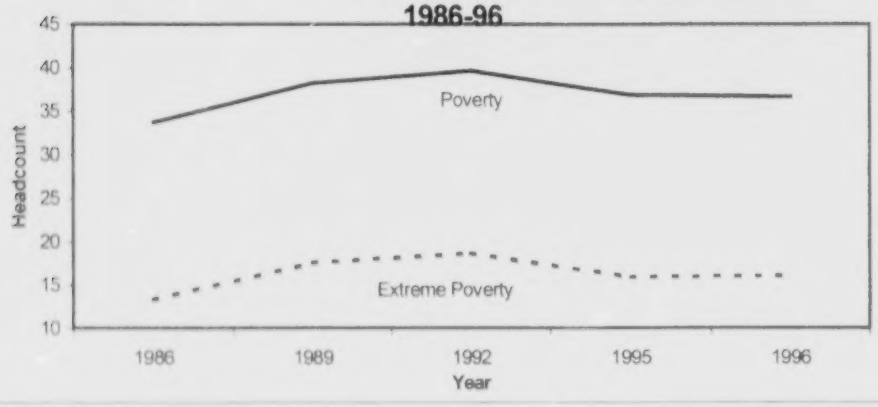


Figure 1.2: Headcount Indices of Poverty and Extreme Poverty in Latin America and the Caribbean, Unweighted, 1986-96

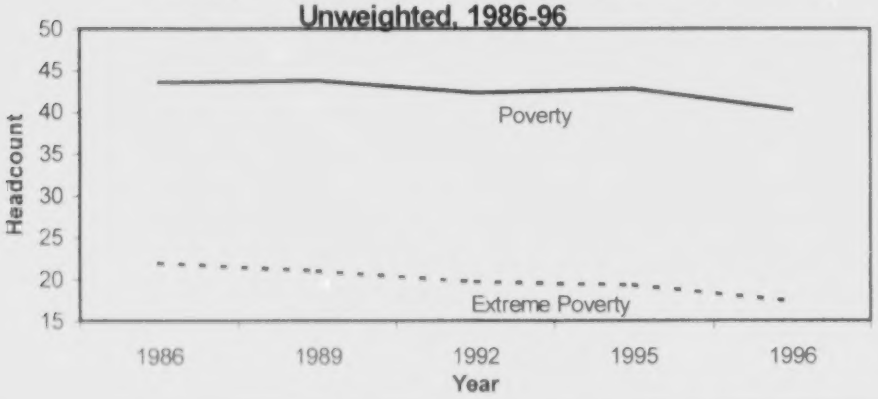
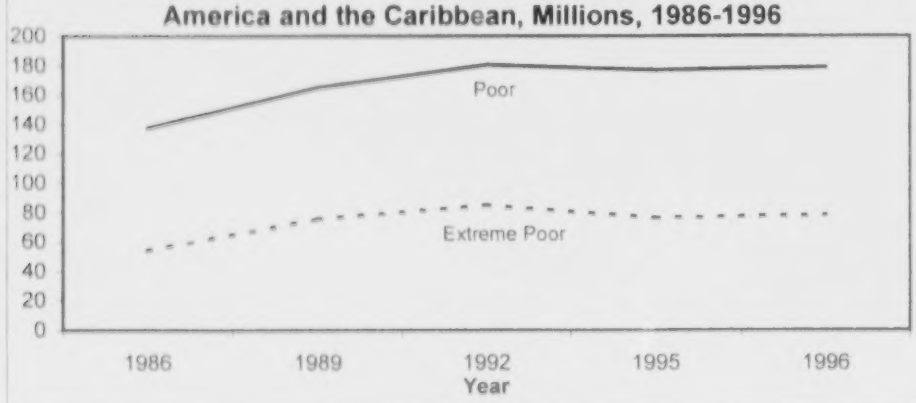


Figure 1.3: Number of Poor and Extreme Poor in Latin America and the Caribbean, Millions, 1986-1996



BOX 1.1. POVERTY MEASURES RELY ON A NUMBER OF METHODOLOGICAL ASSUMPTIONS

Poverty measures. Three ingredients are needed to compute a poverty measure: a) an indicator of well-being such as consumption or income per equivalent adult, b) a poverty line to which the indicator can be compared, and c) a statistical tool (the poverty measure) used for reporting the result of the comparison of the indicator with the poverty line at the aggregate level. The most widely used poverty measures are the first three measures of the additively decomposable FGT class (Foster, Greer, and Thorbecke, 1984). The headcount index of poverty H is the share of the population living with per capita income or consumption below the poverty line. The poverty gap PG captures the distance separating the poor from the poverty line as a proportion of that line (the non poor having a zero distance). The squared poverty gap SPG takes into account not only the distance separating the poor from the poverty line, but also the inequality among the poor by squaring the distance separating the poor from the poverty line. It is said that H, PG, and SPG provide measures of, respectively, the incidence, the depth, and the severity of poverty[3].
Denoting by Y_i the indicator of well being for household i (such as per capita income), by N the population, by w_i the household's weight (the household's size times its expansion factor, the sum of the weights being N), and by Z the poverty line, the three poverty measures H, PG, and SPG are obtained for θ equal to 0, 1, and 2 in:

$$P_\theta = \Sigma_{Y_i<Z} (w_i/N) [(Z - Y_i)/Z]^\theta$$

Poverty lines. Our poverty lines aim at measuring the cost of basic food needs (extreme poverty line) as well as the cost of both food and other basic needs (moderate poverty line). The extreme poverty lines are based on the cost of country-specific food baskets providing 2,200 kcal per day per person. Following standard practice in LAC, the moderate poverty lines are equal to twice the food poverty lines (simulations are provided below in which the moderate poverty lines in rural areas are set at only 1.75 times the cost of food needs). A household is deemed poor if its indicator of well-being (in our case, income per capita) is below the moderate poverty line. The household is in extreme poverty if its per capita income is below the extreme poverty line. The total number of the poor is the number of the extreme poor plus the number of the moderate poor, who are poor but not extremely poor. The poverty lines have been adjusted over time using the countries' monthly CPI matched with the month and year of the household surveys.

Indicators of well-being and adjustments for underreporting. It is a common practice in LAC to adjust welfare indicators for underreporting in the surveys. There is a presumption of underreporting when the mean income or consumption in the surveys is below the National Accounts aggregates. Underreporting tends to be more severe when poverty measures are based on income instead of consumption. The problem is that many LAC countries do not have good consumption surveys. When such surveys exist, there is a lack of comparable surveys over time. For this report, all poverty measures are therefore based on income. To take into account the possibility of underreporting of income, we have computed three sets of poverty measures:

[3] If one wants to pay more attention to the poorest of the poor, the squared poverty gap should be preferred as a measure of poverty to the headcount index or the poverty gap. Consider a transfer from a very poor household well below the poverty line to a less poor household. The transfer is such that the less poor household exactly reaches the poverty line. In such a scenario, social welfare will have deteriorated because resources will have been shifted from a more to a less needy household. This negative impact on welfare will be captured by an increase in the squared poverty gap. By contrast, the headcount index of poverty will have been reduced by the transfer (one less household is poor), and the poverty gap will have remained unchanged. It other words, the headcount index and the poverty gap may not adequately capture changes in well being in a society, and public policies should be evaluated using the square poverty gap rather than the headcount or poverty gap.

- Upper bound for poverty: At one extreme, if all income underreporting is done by the non-poor, the measures of poverty obtained without adjustments for underreporting are unbiased. That is, unadjusted measures of poverty provide an upper bound for poverty measurement.
- Lower bound for poverty: At the other extreme, if the underreporting done by the poor is similar to that done by the non-poor, and if it does not depend on the source of income (i.e. underreporting is similar for earnings and other forms of income), then all incomes in the surveys can be scaled up by a common factor. One possibility is to adjust incomes upward using the ratio of per capita GDP to the mean per capita income in the survey.
- Mid-point: A better possibility for upward adjustment would be to take per capita disposable income rather than per capita GDP, in which case the adjustment factor would be lower and poverty higher. Because per capita disposable income is not available and/or comparable in the National Accounts of many LAC countries, we used instead per capita consumption as a proxy, and adjusted per capita income upward accordingly. All poverty measures in this chapter are based on mid-points.

Our estimates of poverty and extreme poverty for LAC are similar to those obtained in other studies. Some studies have suggested an increase in poverty in LAC since the mid-1980s but others have suggested stability or a small decrease. Tables 1.4 provides key estimates. (Note for comparability that the sample of countries covered changes from study to study.)

- At the Inter-American Development Bank, Londono and Szekely (1997) find an increase in the headcount index for extreme poverty in LAC from 12.0 percent in 1986 to 16.2 percent in 1995 (using the US$1 a day poverty line in purchasing power parity terms). For total poverty, they suggest an increase from 25.9 to 33.1 percent (using US$2 a day).
- At CEPAL (1999), the Panorama Social for 1998 suggests that the share of poor households (rather than individuals) in Latin America remained stable between 1980 and 1997, at 35–36 percent for total poverty and 15–16 percent for extreme poverty. The poverty lines correspond to the cost of a basic food basket for extreme poverty, and to that cost scaled up by a fixed factor (2.0 in urban, 1.75 in rural) for moderate poverty. The corresponding headcount index for poor individuals is higher because larger households are more likely to be poor than smaller ones (CEPAL's headcount for individuals is about 42 percent in 1997).
- At the World Bank, the global poverty update suggests stable poverty for LAC, at about 16 percent for the US$1 poverty line, and at 36 percent for the US$2 poverty line.

Table 1.4. Poverty and Extreme Poverty in LAC According to Other Studies

	Londono and Szekely (1997)—H, PG, and SPG measures, population based					
	Poverty (US $2 PPP per day)			Extreme poverty (US $1 PPP per day)		
	H	*PG*	*SPG*	*H*	*PG*	*SPG*
1986	25.9	10.0	4.9	12.0	2.3	1.0
1989	34.8	15.6	8.8	17.0	5.4	2.8
1992	33.1	15.5	9.4	16.0	6.3	4.2
1995	33.1	15.4	9.2	16.2	6.1	3.7
	World Bank (1999)—Headcount indices, population based					
	Poverty (US $2 PPP per day)			Extreme poverty (US $1 PPP per day)		
1987	35.5			15.3		
1990	38.1			16.8		
1993	35.1			15.3		
1996	37.0			15.6		
	CEPAL (1999) – Headcount indices, household based, by sector					
	Poverty (Cost of food/non-food basic needs)			Extreme poverty (Cost of food basic needs)		
	National	*Urban*	*Rural*	*National*	*Urban*	*Rural*
1980	35	25	54	15	9	28
1990	41	35	58	18	12	34
1994	38	32	56	16	11	34
1997	36	30	54	15	10	31

In the table above, H = Headcount, PG = Poverty Gap, and SPG = Squared Poverty Gap
Source: Londono and Szekely (1997), CEPAL (1999), and the World Development Report 2001 (World Bank, forthcoming).

Projections for poverty in LAC in 1998 suggest limited progress since 1996. Projections of poverty measures for the years 1997 and 1998 at the regional level are provided in Table 1.5. These projections are not based on household surveys for these years. Rather, they were obtained using estimates of the elasticity of poverty and inequality to growth. These elasticities are then combined to actual measures of per capita GDP growth in the region to yield the poverty projections. Thanks to positive per capita GDP growth in LAC (+3.52 percent in 1997 and +0.77 percent in 1998), poverty is likely to have decreased in both years, as indicated in Table 1.5. However, the decrease in poverty is small. Moreover, if one were to use the growth in per capita consumption to scale up mean household incomes for 1997 and 1998 rather than the growth in per capita GDP, the expected reduction in poverty by 1998 would be smaller (per capita consumption grew by 2.26 percent in 1997 and 0.37 percent in 1998, below the rate of per capita GDP growth). Finally, due to population growth, the number of the poor and extreme poor may be expected to have remained stable between 1996 and 1998.

Table 1.5. Projections for Poverty Measures in LAC to the Year 1998

	Poverty			Extreme poverty			Population and number of poor and extreme poor		
	H	PG	SPG	H	PG	SPG	Pop.	Poor	Ext. poor
Elasticities	-0.94	-1.11	-1.19	-1.30	-1.32	-1.33			
1996 base-line	36.74	16.93	10.72	16.10	7.38	5.09	486.06	178.58	78.26
Using per capita GDP growth in LAC to scale up household incomes									
1997 (projection)	35.52	16.27	10.27	15.36	7.04	4.85	493.95	175.47	75.89
1998 (projection)	35.27	16.13	10.18	15.21	6.97	4.80	501.87	177.00	76.33
Using per capita consumption growth in LAC to scale up household incomes									
1997 (projection)	35.96	16.51	10.43	15.63	7.16	4.94	493.95	177.62	77.19
1998 (projection)	35.83	16.44	10.39	15.55	7.12	4.91	501.87	179.84	78.05

In the table above, H = Headcount, PG = Poverty Gap, and SPG = Squared Poverty Gap
Source: Own estimates. See chapter 3 for the estimation of the elasticities.

The moderately favorable record of poverty reduction in LAC in the 1990s is commonly attributed to macroeconomic stabilization programs and structural reforms. This is the message coming out of the World Bank's poverty assessments (Ayres, 1999).

- The success in reducing inflation may have constituted the reforms' single most important impact on poverty reduction. The adverse effects of the so-called inflation tax on the poor are examined in the poverty assessment of Brazil, where it is concluded that inflation has a more adverse impact on the poor than previously thought. The Real Plan adopted in late 1993 receives high marks, principally for its controlling of inflation which benefited the poor and contributed to a dramatic reduction in the headcount ratio of poverty in a short period of time. The effects of the inflation tax also receive attention in the assessment of Argentina, in which it is shown that the tax for families in the bottom income quintile was over four times higher than for those in the top quintile in the mid-1980s. Thus the inflation-reducing reforms of the early 1990s were a major factor in lowering the poverty incidence in Argentina. The stabilization measures introduced by the Nicaraguan government in 1991 are examined in the assessment for that country. They brought the hyperinflation of 1989–90 to single-digit annual rates in 1991–92. The assessment concludes that the success in arresting inflation unequivocally benefited the poor (on these issues, see also Ahumada et al., 1993).
- The impact of trade liberalization and fiscal retrenchment on poverty is less clear-cut. Some assessments argue that trade liberalization benefited the rural poor more than the urban poor, others that both benefited, still others that it is necessary to consider within-sector variations among the poor (e.g., medium to large rural producers may have benefited more from liberalization than small-scale farmers). Over the short-run, fiscal retrenchment is alleged to have hurt the poor via cutbacks in public expenditure programs largely devoted to them, but this negative effect is seen to be more than counterbalanced by the positive impact on the reduction of inflation. The cutbacks in public sector employment also appear to have negatively affected the poor in the short-run, but over the medium- and longer-term, the net effects on the poor are seen to depend on the rate and composition of overall economic expansion, employment creation in the private sector, and the adequacy of safety nets and educational programs for cushioning the transition to a new productive structure.

The country-level poverty estimates highlight the negative impact of macroeconomic shocks on the poor, as well as the potential for poverty reduction through economic growth. In Table 1.6, the second column provides the normalized mean income (mean income per capita MI divided by the poverty line Z). A value of one indicates that on average, the population in the country has income exactly at the level of the poverty line. Since the moderate poverty line is twice the extreme poverty line, the normalized mean income with the extreme poverty line is twice that obtained with the moderate poverty iine. Next, the table provides the headcount index, poverty gap, and squared poverty gap with both the extreme and moderate poverty lines. The per capita GDP in 1995 U.S. dollars is given as reference for the country's level of economic development. The expanded sample size is the population represented in the survey. In Argentina for example, the expanded sample size in 1996 is 11.6 million people because the survey used covers only the Greater Buenos Aires area.[4] The next column gives the share of the country population covered. Finally, the extreme poverty line is given in local currency.

[4] In some countries, the coverage of the surveys changes over time. In Honduras, the surveys are national for all years except 1986, a year for which we applied the 1989 national to urban poverty ratio to come up with the figure

- Impact of macroeconomic shocks: It is well-known that macroeconomic shocks have plagued Latin American countries since the 1980s, with disastrous consequences for poverty (Glewwe and Hall, 1998; Lustig, 1995, 1999; Ganuza et al., 1998). This is confirmed here. Consider for example the case of Mexico between 1994 and 1996. Mexico was hit by an economic crisis in 1995 following the devaluation of the peso in December 1994. The crisis resulted in a sharp drop in per capita GDP and consumption, and in a large increase in poverty. The same applies to Argentina and Brazil in the late 1980s. These macro shocks have undermined progress towards poverty reduction (see chapters 3 and 5 for a discussion).
- Poverty reduction through economic growth: In Table 1.6, growth can be measured in the surveys using the change over time in the normalized mean income (MI/Z). In a large majority of cases, economic growth results in a reduction of poverty (see chapter 3 for a discussion). Another way to look at the impact of growth on poverty reduction is to examine poverty levels according to economic development as measured by per capita GDP in U.S. dollars. The richer countries in LAC, such as Argentina, Chile, and Uruguay, have levels of total (extreme plus moderate) poverty between 15 and 30 percent for the headcount index (Argentina's lower poverty is in part due to lower coverage of the survey, in better off areas). Brazil and Mexico follow, with levels of poverty between 30 and 40 percent. Columbia, the Dominican Republic, Ecuador, Paraguay, and Republica Bolivariana de Venezuela tend to have poverty levels between 40 and 60 percent. Finally, the two poorest countries in the sample, Bolivia and Honduras, which will participate in the debt relief program HIPC (Highly Indebted and Poor Countries), have poverty levels above 60 percent. While the levels of poverty depend on other factors such as inequality, there is clearly a strong association between growth and poverty.
- Caution in using country-level poverty estimates: Table 1.6 could be used to discuss the performance of various countries in reducing poverty, but we will not do this here. The necessity to use a standard methodology for estimating poverty measures in all the countries in a study such as ours does not allow for special adjustments that may be warranted in some countries. The reader is advised to consult poverty studies at the country-level before reaching a judgment on a country's performance. Moreover, in some countries the data is not as comparable over time as in others. This is for example the case in Bolivia and the Dominican Republic, where different types of surveys were used over time (for alternative estimates of poverty in Bolivia, see for example Jimenez and Wodon, 2000.)

Poverty tends to be higher in rural than in urban areas, and this justifies a pro-rural bias in public expenditures targeted to the poor. It is well known that poverty measures tend to be higher in rural than in urban areas. This is true in LAC as well, as shown in Table 1.7, which gives estimates of poverty in urban and rural areas in LAC on the basis of the countries in the sample. While all 12 countries are represented for the urban poverty estimates, only half of the countries have their rural population covered in the surveys for the whole period in review. Therefore the coverage of the rural population is lower than that of the urban population. However since both Brazil and Mexico have national surveys, the coverage of the sample for rural areas remains high. The urban and rural estimates at the country level are given in Tables 1.8 and 1.9. In 1996, four more countries have national surveys and therefore coverage in rural

in Table 1.5. In Bolivia, Columbia, Paraguay, and Uruguay, there is rural data only for the last survey year, in which case rural areas were not included for computing poverty trends. In Chile 1986 and the Dominican Republic 1989, we could not distinguish rural from urban areas.

areas (Bolivia, Colombia, Paraguay, and Uruguay), but this is not used here in order to provide a consistent sample of countries for the rural trend. The following observations can be made:

- According to Table 1.7, the incidence of extreme poverty is three times higher in rural than in urban areas. For total poverty, the incidence is twice higher in rural areas. Even if one assumes that the cost of basic non-food needs is lower in rural areas, so that following standard practice in LAC the moderate poverty line in rural areas is set equal to 1.75 times the extreme poverty line (versus a multiplier of two for the moderate poverty line in urban areas), the differences in poverty remain very large. The high level of rural poverty in LAC tends to justify a pro-rural bias for poverty alleviation in many countries.
- As was the case for the overall poverty estimates, the urban and rural averages obtained with equal weights for all countries show a more consistent decrease over time in poverty.
- The ups and downs in the poverty measures are similar in urban and rural areas. This suggests that economic growth and macroeconomic shocks affect both areas similarly.
- Finally, note that with 75 percent of the LAC population being urban, the absolute numbers of the extreme poor is about the same in rural and urban areas, and the absolute number of the poor (both extreme and moderate) is a bit larger in urban areas. [Note that if the aim is to minimize the squared poverty gap as the preferred measure of poverty, funds should be allocated at the margins according to the poverty gap, which would also result in a share of funds allocated to rural areas larger than the share of the population living in rural areas.]

Figure 1.4: Headcount Indices of Poverty and Extreme Poverty in Latin America and the Caribbean, Urban, Weighted, 1986-96

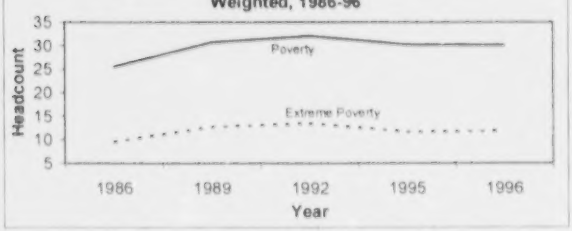


Figure 1.5: Headcount Indices of Poverty and Extreme Poverty in Latin America and the Caribbean, Urban, Unweighted, 1986-96

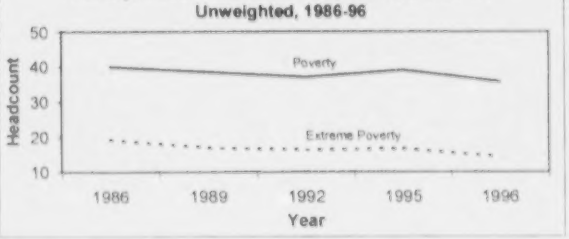


Figure 1.6: Headcount Indices of Poverty and Extreme Poverty in Latin America and the Caribbean, Rural, Weighted, 1986-96

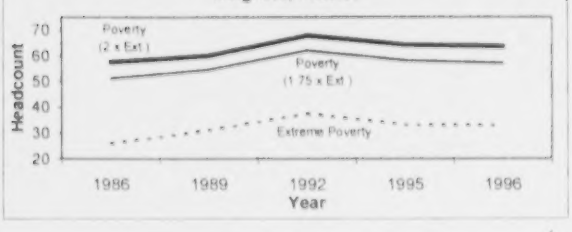


Figure 1.7: Headcount Indices of Poverty and Extreme Poverty in Latin America and the Caribbean, Rural, Unweighted, 1986-96

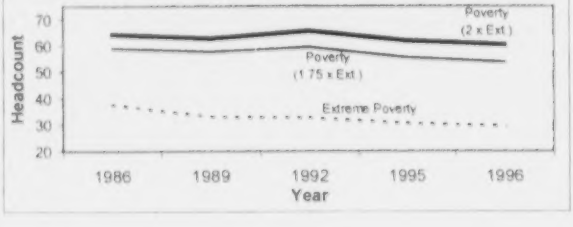


Figure 1.8 Headcount of Extreme Poverty in Latin America, 1996

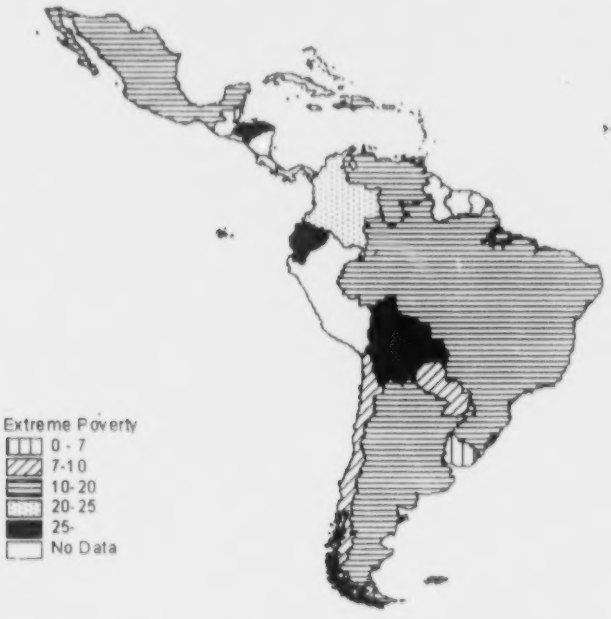
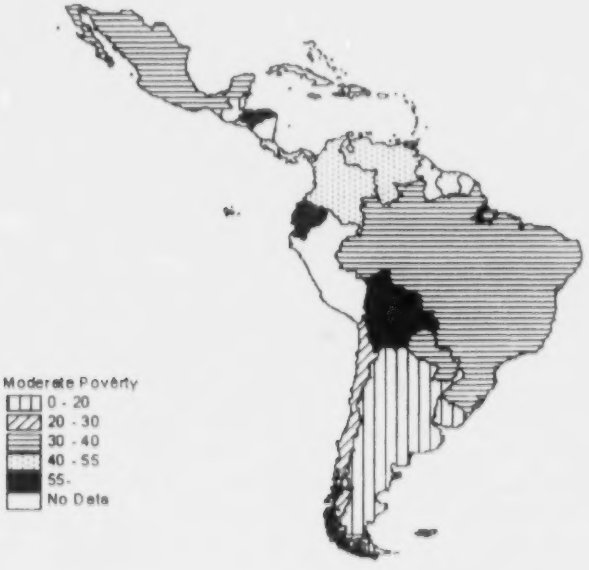


Figure 1.9 Headcount of Poverty in Latin America, 1996



Note: An individual is extremely poor if he/she lives in a household whose per capita income does not cover basic food needs. An individual is poor if he/she lives in a household whose per capita income does not cover the sum of basic food and non-food needs.

Figure 1.10 Percentage Change, Headcount of Extreme Poverty in Latin America, 1992-96

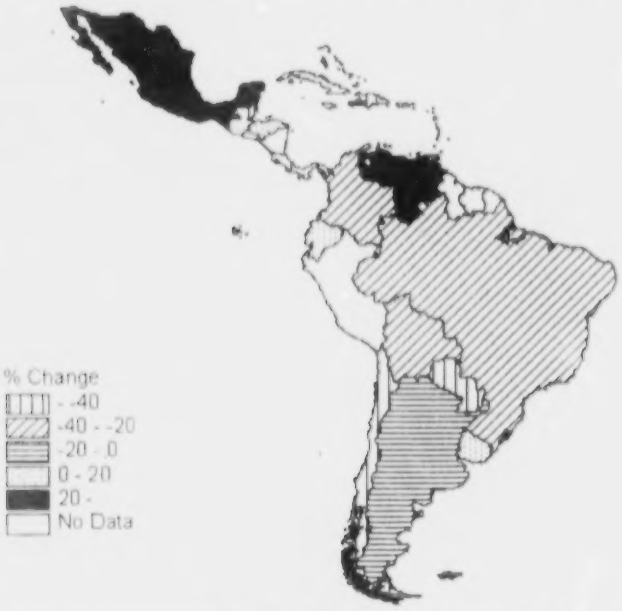


Figure 1.11 Percentage Change, Headcount of Poverty in Latin America, 1992-96

Note: The percentage change in the headcount index of poverty is measured by computing $(H_{1996} - H_{1992})/H_{1992} - 1$. This is not equivalent to a "percentage point" change such as $H_{1996} - H_{1992}$.

Table 1.6. Poverty Measures By Country, 1986–96

	Normalized mean income and extreme poverty (adjusted to PC consumption)				Normalized mean income and poverty (adjusted to PC consumption)				PC GDP in 1995US$	Expanded sample size	% of pop.	Extreme poverty line
Argentina (urban only)												
	MI/Z	HC	PG	SPG	MI/Z	HC	PG	SPG	GDP	Survey pop.	% pop.	Z
1986	12.32	10.90	10.51	10.45	6.16	12.93	11.16	10.74	7473.25	10397995	33.81	19.50
1989	9.79	13.56	12.51	12.15	4.90	19.89	14.48	13.15	6707.39	11089680	34.55	9749.97
1992	9.53	11.06	10.08	9.84	4.77	14.58	11.32	10.50	7670.21	11662050	34.91	47.03
1995	9.41	9.03	7.69	7.33	4.71	14.91	9.77	8.41	8075.78	11435046	32.89	54.30
1996	9.98	10.20	9.06	8.78	4.99	15.22	10.77	9.64	8353.19	11561652	32.83	54.34
Bolivia (urban only)												
	MI/Z	HC	PG	SPG	MI/Z	HC	PG	SPG	GDP	Survey pop.	% pop.	Z
1986	1.99	41.18	21.20	14.82	1.00	69.98	39.27	27.48	797.37	2068902	34.39	43346.51
1989	1.85	52.02	32.46	24.85	0.93	73.62	48.29	37.57	817.41	2438842	37.97	70.29
1992	1.85	42.03	17.26	9.69	0.92	73.42	39.09	25.02	852.27	2452125	35.55	107.93
1995	1.84	46.02	19.26	10.74	0.92	75.52	41.80	27.24	905.75	3188958	43.01	134.98
1996	2.39	32.29	12.23	6.66	1.19	64.48	31.34	19.06	921.25	4573820	60.28	151.57
Brazil												
	MI/Z	HC	PG	SPG	MI/Z	HC	PG	SPG	GDP	Survey pop.	% pop.	Z
1986	6.84	11.71	4.69	2.88	3.42	30.02	13.02	7.64	4278.45	135608433	98.31	220.09
1989	5.53	22.35	10.03	6.25	2.77	43.81	21.95	14.15	4333.06	144061408	98.95	64.63
1992	4.16	24.87	12.58	8.81	2.08	46.72	24.39	16.64	3982.88	146090000	95.63	139644.8
1995	5.68	18.57	8.97	6.28	2.84	38.12	18.89	12.43	4417.51	152374603	95.70	36.94
1996	6.10	18.17	8.91	6.40	3.05	36.67	18.18	12.15	4480.27	154360589	95.66	42.19
Chile												
	MI/Z	HC	PG	SPG	MI/Z	HC	PG	SPG	GDP	Survey pop.	% pop.	Z
1987	3.82	19.76	7.35	4.17	1.91	47.79	20.75	12.09	2555.07	n.a	n.a	5325.43
1989	3.98	19.00	5.89	2.76	1.99	50.97	20.91	11.27	2930.85	12623620	98.04	7070.63
1992	3.78	16.81	6.18	3.67	1.89	46.16	19.05	10.76	3502.12	13451840	97.96	12228.03
1995	5.88	8.24	2.75	1.61	2.94	30.75	11.02	5.66	4176.38	13962537	98.26	16400.88
1996	6.34	7.44	2.47	1.48	3.17	28.02	9.97	5.10	4419.24	14493983	100.52	17385.42
Columbia (urban only)												
	MI/Z	HC	PG	SPG	MI/Z	HC	PG	SPG	GDP	Survey pop.	% pop.	Z
1986	2.35	38.55	22.14	17.19	1.17	63.99	37.18	27.36	1938.78	10315249	32.98	4417.89
1989	2.79	29.22	14.03	9.76	1.40	57.93	29.47	19.50	2071.61	10915692	33.05	9017.50
1992	3.19	28.46	16.86	13.66	1.60	53.57	29.34	21.22	2161.87	12463234	35.74	19468.73
1995	3.23	24.11	11.48	8.19	1.62	54.07	25.78	16.54	2407.19	20218660	54.92	35619.95
1996	3.36	23.45	11.48	8.57	1.68	52.24	24.94	16.27	2410.15	23382962	62.44	42666.60
Dominican Republic												
	MI/Z	HC	PG	SPG	MI/Z	HC	PG	SPG	GDP	Survey pop.	% pop.	Z
1986	3.69	21.55	14.74	12.74	1.84	42.18	23.40	17.69	1342.70	6508566	99.80	50.76
1989	3.89	16.15	5.82	3.44	1.94	41.37	18.08	10.33	1481.50	6771800	97.30	98.91
1992	3.25	18.54	6.52	3.58	1.62	49.50	21.16	11.85	1430.94	n.a	n.a	266.62
1995	3.60	21.77	11.51	9.12	1.80	47.37	23.17	15.66	1525.32	7351331	93.80	322.88
1996	4.06	12.09	4.28	2.31	2.03	36.09	14.10	7.67	1607.26	7456101	93.50	341.89

In the table above, MI/Z = Mean Income / Poverty Line H = Headcount, PG = Poverty Gap, SPG = Squared Poverty Gap, GDP = Gross Domestic Product, and Z = Poverty Line

Source: Own estimates.

Table 1.6. continued

	Normalized mean income and extreme poverty (adjusted to PC consumption)				Normalized mean income and poverty (adjusted to PC consumption)				PC GDP in US$	Expanded sample size	% of pop.	Extreme poverty line
Ecuador (urban only)												
	MI/Z	H	PG	SPG	MI/Z	H	PG	SPG	GDP	Survey pop.	% pop.	Z
1987	3.36	18.19	9.20	6.62	1.68	46.00	21.06	13.31	1386.57	2959287	30.90	3836.24
1989	3.05	14.60	5.44	3.22	1.53	45.99	18.06	9.86	1464.91	589[illegible]06	58.70	10894.34
1992	3.09	21.92	9.32	5.91	1.55	49.25	22.44	13.88	1534.06	6566707	61.20	41119.75
1995	2.87	21.85	9.36	6.04	1.44	55.09	24.95	14.95	1565.39	7037563	61.40	82314.43
1996	2.80	25.44	12.95	9.67	1.40	55.19	26.75	17.79	1563.93	7250128	62.00	102893.7
Honduras												
	MI/Z	H	PG	SPG	MI/Z	H	PG	SPG	GDP	Survey pop.	% pop.	Z
1986	2.51	41.91	23.51	16.78	1.26	60.61	37.22	27.80	663.26	1345808	29.70	36.08
1989	2.04	48.21	24.42	16.15	1.02	73.18	43.68	30.95	700.11	4474226	90.20	42.70
1992	2.71	34.27	17.57	12.17	1.36	60.05	32.92	22.80	699.08	4968320	91.70	76.03
1995	2.52	37.68	18.67	12.57	1.26	64.21	35.39	24.42	698.29	5328942	91.80	122.74
1996	2.48	35.00	16.32	10.65	1.24	62.95	33.39	22.29	703.56	5552601	91.00	169.92
Mexico												
	MI/Z	H	PG	SPG	MI/Z	H	PG	SPG	GDP	Survey pop.	% pop.	Z
1984	4.44	9.49	2.70	1.19	2.22	33.99	12.03	5.95	3758.39	75972257	104.00	4871.77
1989	6.17	6.39	2.03	0.93	3.08	23.44	8.34	4.19	3924.34	78739029	96.30	71911.61
1992	5.94	8.09	2.34	0.96	2.97	26.94	9.70	4.91	4212.81	84052834	96.90	150495.4
1994	6.15	6.99	1.81	0.67	3.08	25.37	8.92	4.30	4323.41	89367812	99.30	176.33
1996	4.96	10.22	3.17	1.42	2.48	32.10	12.13	6.27	4117.98	92586601	99.40	318.68
Paraguay (urban only)												
	MI/Z	H	PG	SPG	MI/Z	H	PG	SPG	GDP	Survey pop.	% pop.	Z
1986	2.40	29.69	9.69	4.76	1.20	60.94	28.49	16.60	1700.09	982644	25.90	9834.41
1989	3.38	11.59	3.15	1.36	1.69	40.93	14.49	7.15	1816.38	1116244	27.10	20401.29
1992	3.53	14.45	4.71	2.59	1.77	39.72	15.92	8.74	1787.37	1229933	27.70	38383.08
1995	3.67	13.89	3.87	1.83	1.84	42.69	16.36	8.44	1860.45	1408977	29.20	60327.31
1996	3.75	9.48	2.44	1.17	1.87	39.47	13.84	6.59	1835.77	1494860	30.20	66227.71
Uruguay (urban only)												
	MI/Z	H	PG	SPG	MI/Z	H	PG	SPG	GDP	Survey pop.	% pop.	Z
1981	5.28	5.58	1.75	0.89	2.64	19.78	7.00	3.56	5266.75	2661022	88.00	467.11
1989	5.13	4.27	1.10	0.47	2.57	18.97	6.00	2.77	4851.37	2747799	89.30	19.53
1992	5.40	4.43	1.39	0.70	2.70	18.02	5.99	2.93	5326.34	2802575	89.50	139.94
1995	5.20	5.29	1.73	0.88	2.60	20.65	7.15	3.59	5606.86	2870653	90.20	430.07
1996	5.56	5.04	1.72	0.92	2.78	19.38	6.66	3.39	5859.80	2893584	90.30	515.85
Republica Boliviarana de Venezuela												
	MI/Z	H	PG	SPG	MI/Z	H	PG	SPG	GDP	Survey pop.	% pop.	Z
1986	4.14	15.29	9.75	8.36	2.07	35.39	17.54	12.44	3496.11	17899423	101.70	354.73
1989	3.86	14.75	8.88	7.61	1.93	34.99	16.34	11.46	3245.65	19368894	101.80	1202.48
1992	4.15	11.81	7.74	6.77	2.08	30.18	14.18	9.93	3725.42	20350494	99.60	2804.79
1994	3.48	16.56	7.01	4.59	1.74	41.68	18.33	11.00	3537.19	21850920	100.00	10042.23
1996	3.62	19.29	9.31	6.55	1.81	41.20	19.82	12.96	3449.36	22315139	100.00	21640.79

In the table above, MI/Z = Mean Income / Poverty Line H = Headcount, PG = Poverty Gap, SPG = Squared Poverty Gap, GDP = Gross Domestic Product, and Z = Poverty Line

Source: Own estimates.

Table 1.7. Poverty Measures for LAC, Urban and Rural Areas, 1986–96

	Population-weighted average			Average with equal country weights		
	Headcount	Poverty Gap	Squared Poverty Gap	Headcount	Poverty Gap	Squared Poverty Gap
URBAN AREAS, extreme poverty						
1986	9.52	4.86	3.68	19.21	10.14	7.64
1989	12.77	6.05	4.23	16.98	8.76	6.46
1992	13.46	6.74	4.94	16.34	8.09	5.89
1995	11.65	5.50	3.95	16.62	7.63	5.27
1996	11.83	5.67	4.18	14.29	6.72	4.81
URBAN AREAS, poverty (moderate poverty line = 2* extreme poverty line)						
1986	25.51	11.06	6.99	39.95	19.96	13.56
1989	30.62	13.89	8.77	38.49	18.33	12.09
1992	32.01	14.63	9.47	37.11	17.46	11.36
1995	30.14	13.23	8.19	39.03	17.98	11.28
1996	30.03	13.19	8.29	35.74	15.91	9.94
RURAL AREAS, extreme poverty						
1986	25.93	10.01	5.78	37.71	17.41	11.36
1989	31.16	13.57	8.11	33.07	14.19	8.66
1992	37.64	17.71	11.54	32.81	14.28	9.00
1995	33.30	14.24	8.69	30.49	13.01	8.10
1996	33.01	14.13	8.67	29.53	12.12	7.28
RURAL AREAS, poverty (moderate poverty line = 2* extreme poverty line)						
1986	57.43	26.51	15.90	64.24	34.51	23.34
1989	59.79	30.25	19.33	62.67	31.95	20.43
1992	67.58	35.93	24.05	65.40	32.60	20.78
1994	64.14	32.31	20.60	61.88	30.33	19.13
1996	63.33	31.76	20.32	60.24	29.08	18.10
RURAL AREAS, poverty (moderate poverty line = 1.75* extreme poverty line)						
1986	51.09	22.48	13.19	58.89	30.33	20.22
1989	54.52	26.45	16.62	57.66	28.18	17.72
1992	61.94	31.80	21.02	59.31	28.84	17.79
1994	58.13	28.15	17.63	55.49	26.24	16.30
1996	56.99	27.70	17.42	53.76	25.07	15.34

Source: Own estimates.

Table 1.8. Urban Poverty Measures for Countries with National Coverage, 1986–96

	Extreme poverty			Poverty		
Brazil						
	H	PG	SPG	H	PG	SPG
1986	6.34	2.70	1.87	19.85	7.89	4.51
1989	14.53	6.24	3.95	34.13	15.48	9.47
1992	17.66	8.46	5.91	38.66	18.36	11.90
1995	12.78	6.26	4.61	30.17	13.95	8.95
1996	12.69	6.25	4.72	29.16	13.44	8.77
Chile						
	H	PG	SPG	H	PG	SPG
1987	17.12	6.09	3.41	45.27	18.77	10.62
1989	16.46	4.89	2.26	48.28	18.92	9.90
1992	13.98	5.34	3.32	41.22	16.50	9.28
1994	6.80	2.38	1.48	27.41	9.57	4.89
1996	5.83	2.09	1.35	24.09	8.27	4.21
Dominican Republic						
	H	PG	SPG	H	PG	SPG
1986	15.71	12.51	11.36	33.21	18.01	14.25
1989	11.78	4.94	3.07	32.57	13.92	8.32
1992	10.22	4.94	3.53	34.59	14.00	8.06
1994	20.78	11.87	9.74	44.15	22.18	15.50
1996	8.80	3.12	1.71	29.34	11.00	5.82
Honduras						
	H	PG	SPG	H	PG	SPG
1986	31.07	15.89	11.81	57.01	29.86	20.80
1989	20.74	11.08	8.46	48.19	23.19	15.32
1992	19.54	11.12	8.84	41.05	20.27	14.20
1995	21.74	10.62	7.79	49.12	23.00	14.96
1996	17.68	9.82	7.65	43.27	20.15	13.38
Mexico						
	H	PG	SPG	H	PG	SPG
1984	3.97	1.20	0.54	21.25	6.25	2.81
1989	2.37	0.87	0.45	11.17	3.44	1.68
1992	2.24	0.54	0.20	15.01	4.01	1.68
1994	1.93	0.44	0.14	14.58	3.96	1.56
1996	3.71	0.94	0.36	20.53	6.24	2.72
Republica Boliviarana de Venezuela						
	H	PG	SPG	H	PG	SPG
1986	12.16	8.75	7.94	29.20	14.56	10.72
1989	12.68	8.41	7.51	30.26	14.29	10.40
1992	10.05	7.12	6.45	26.17	12.34	8.87
1994	14.30	6.35	4.36	36.98	16.11	9.76
1996	16.86	8.47	6.13	36.55	17.55	11.61

In the table above, H = Headcount, PG = Poverty Gap, and SPG = Squared Poverty Gap

Source: Own estimates.

Table 1.9. Rural Poverty Measures for Countries with National Coverage, 1986–96

	Extreme poverty			Poverty (moderate poverty line = 2.0* extreme poverty line)			Poverty (moderate poverty line = 1.75* extreme poverty line)		
Brazil									
	H	PG	SPG	H	PG	SPG	H	PG	SPG
1986	25.41	9.80	5.49	55.32	25.97	15.58	49.70	22.17	12.96
1989	44.92	20.96	12.88	71.77	40.64	27.68	67.34	36.51	24.31
1992	50.41	27.20	19.08	75.27	45.75	33.43	70.91	41.85	30.24
1995	41.18	19.78	12.91	68.74	38.31	26.18	63.77	34.29	23.06
1996	39.24	19.13	12.86	65.55	36.40	25.14	59.88	32.66	22.24
Chile									
	H	PG	SPG	H	PG	SPG	H	PG	SPG
1987	34.29	14.23	8.37	61.63	31.62	20.19	57.00	27.15	16.61
1989	32.96	11.41	5.54	65.73	31.86	18.81	60.79	27.35	15.48
1992	29.12	9.85	5.19	67.62	30.10	17.18	60.37	25.22	13.94
1995	17.58	5.17	2.47	52.53	20.47	10.67	44.58	16.45	8.27
1996	16.48	4.59	2.22	50.05	19.51	10.06	42.49	15.65	7.75
Dominican Republic									
	H	PG	SPG	H	PG	SPG	H	PG	SPG
1986	27.81	17.14	14.23	51.79	29.18	21.37	48.20	26.19	19.42
1989	20.84	6.76	3.84	50.79	22.55	12.48	47.27	20.24	11.34
1992	27.41	8.21	3.65	65.28	28.77	15.89	58.00	24.08	12.64
1995	23.31	10.95	8.17	52.35	24.71	15.92	45.76	21.18	13.75
1996	16.21	5.72	3.05	44.52	17.98	9.99	36.91	14.67	8.04
Honduras									
	H	PG	SPG	H	PG	SPG	H	PG	SPG
1986	92.09	44.27	27.74	100.87	69.00	52.29	97.30	63.40	46.88
1989	61.48	30.87	19.87	85.25	53.58	38.51	82.24	49.24	34.52
1992	44.95	22.25	14.59	73.82	42.10	29.04	69.49	37.83	25.66
1995	49.83	24.80	16.22	75.72	44.84	31.64	71.33	40.76	28.19
1996	48.54	21.42	13.03	78.29	43.72	29.26	73.36	39.12	25.51
Mexico									
	H	PG	SPG	H	PG	SPG	H	PG	SPG
1984	19.00	5.30	2.31	55.93	21.97	11.35	47.97	17.71	8.74
1989	12.86	3.89	1.71	43.20	16.24	8.21	36.71	12.81	6.27
1992	23.64	7.14	2.97	58.60	24.82	13.50	51.51	20.49	10.68
1994	20.60	5.50	2.10	54.46	22.29	11.66	47.42	18.18	9.02
1996	27.55	9.10	4.24	62.86	27.78	15.73	55.70	23.24	12.71
Republica Boliviarana de Venezuela									
	H	PG	SPG	H	PG	SPG	H	PG	SPG
1986	27.69	13.71	10.02	59.88	29.31	19.22	53.15	25.36	16.72
1989	25.35	11.25	8.14	59.26	26.86	16.88	51.64	22.93	14.41
1992	21.33	11.05	8.50	51.83	24.08	15.62	45.61	20.55	13.56
1995	26.97	10.03	5.65	63.32	28.59	16.66	55.90	24.04	13.69
1996	29.17	12.74	8.26	60.19	29.09	18.45	54.19	25.06	15.79

In the table above, H = Headcount, PG = Poverty Gap, and SPG = Squared Poverty Gap
Source: Own estimates.

In many of the countries, beyond urban/rural differences, there are also large differences in poverty according to geographical location. This is the case in Brazil where poverty is much higher in the north east than in the south and south east, and where poverty reduction has been larger in better off areas (Table 1.10). How can such large geographic differences in poverty be explained? As discussed in Ravallion and Wodon (1999), the differences in poverty between areas can be due to differences in the characteristics of the households living in the various areas, or to differences in the characteristics of the areas themselves. The differences in area characteristics can themselves be due to large and statistically significant regional determinants of income even after controlling for a wide range of households characteristics. They may also be due to differences between areas in the returns to household characteristics. The types of effects at work have implications for policy. Should one invest in household characteristics such as education, or in area characteristics such as roads? Broadly speaking, the larger the area effects on poverty, the stronger the rationale for investing in the physical and social infrastructure of poor areas. An analysis for the Mexico poverty assessment suggests that differences in per capita income between Mexico's 32 states are due more to differences in area characteristics than to differences in the household characteristics for the various areas (Wodon, 1999b).

Table 1.10. Poverty Measures in Brazil by Region, 1989–96

	Poverty					
	Headcount	Poverty Gap	Squared Poverty Gap	Headcount	Poverty Gap	Squared Poverty Gap
		Brazil SE			Brazil NE	
1989	29.75	12.96	7.80	70.31	40.12	27.37
1992	33.16	14.95	9.46	71.12	42.65	30.95
1995	24.66	11.29	7.35	62.90	33.77	22.73
1996	23.15	10.29	6.71	61.47	33.41	22.86
		Brazil S			Brazil NC	
1989	36.86	16.06	9.58	39.87	18.18	11.00
1992	36.45	16.43	10.42	49.23	23.89	15.35
1995	27.83	12.44	7.76	39.02	17.99	11.34
1996	25.93	11.48	7.38	38.23	17.72	11.52

Source: Own estimates.

LAC is one of only three regions of the world where the headcount index of poverty has not been reduced substantially over the last decade according to the global poverty update of the World Bank. This global update prepared for the World Development Report 2001 uses a different methodology for measuring poverty. The poverty lines are based on PPP (Purchasing Power Parity) equivalents for US$1 per day per person (this is near the extreme poverty line), and US$2 per day per person (near the moderate poverty line). Moreover, the Global poverty update uses the POVCAL program to estimate poverty measures on the basis of summary statistics for the distribution of income rather than the household level data itself. According to the latest update (Table 1.11), the headcount index of poverty in LAC has not decreased over the period in review. Two other regions have not made progress: in Sub-Saharan Africa, poverty has remained flat, and in East Europe/Central Asia, it has increased. In all the other regions, poverty has decreased. In the world as a whole, the number of the poor has increased substantially over the last decade.

Table 1.11. Global Poverty Update, World Bank, 1987–98

	Headcount index of poverty					Number of the poor (millions)				
	1987	1990	1993	1996	1998*	1987	1990	1993	1996	1998*
Extreme poverty (US$1 PPP per day per person)										
East Asia	26.60	27.58	25.24	15.03	15.32	415.13	452.45	431.91	266.98	278.32
Excluding China	22.91	15.04	12.37	8.48	9.61	109.22	75.99	65.96	47.54	55.59
East Europe/Central Asia	0.24	1.56	3.95	5.55	5.77	0.95	6.38	16.28	22.76	23.66
Latin America	15.33	16.80	15.31	15.63	15.57	63.66	73.76	70.79	75.99	78.16
Middle East/North Africa	11.53	9.28	8.41	7.81	7.32	24.99	21.99	21.54	21.35	20.85
South Asia	44.94	44.01	42.39	40.12	39.99	474.41	495.11	505.08	504.66	522.00
Sub-Saharan Africa	46.23	47.66	49.60	48.56	46.21	215.47	242.30	272.88	289.13	290.37
Total	29.01	29.63	28.76	24.60	24.52	1194.61	1291.98	1318.49	1180.86	1213.36
Poverty (US$ 2 PPP per day per person)										
East Asia	67.04	66.11	60.52	48.85	49.10	1046.29	1084.44	1035.85	867.70	892.23
Excluding China	61.30	53.98	48.28	41.40	43.28	292.28	272.68	257.38	232.16	250.36
East Europe/Central Asia	3.59	8.49	17.17	23.71	23.72	14.46	34.81	70.76	97.30	97.25
Latin America	35.54	38.09	35.07	37.00	36.44	147.56	167.21	162.20	179.82	182.86
Middle East/North Africa	32.81	28.93	28.75	27.36	27.59	71.12	68.60	73.59	74.81	78.66
South Asia	86.26	86.76	85.41	81.61	83.96	910.64	975.95	1017.83	1026.64	1095.89
Sub-Saharan Africa	78.57	79.47	80.53	80.50	78.84	316.18	404.00	443.01	479.31	495.36
Total	62.09	62.73	61.16	56.79	57.45	2556.25	2735.02	2803.25	2725.59	2842.25

Source: World Development Report 2001 (World Bank, forthcoming); 1998 estimates are based on projections, not actual data.

Latin America and the Caribbean's Performance in Non-monetary Indicators of Well-being is Better

Given that income poverty is an imperfect measure of well-being, tools have been proposed to look at multidimensional indicators. In order to go beyond monetary (income or consumption-based) poverty, the United Nations Development Program (UNDP, 1999) has proposed to use the Human Development Index (HDI). The HDI is a weighted sum of three indices themselves based on underlying indicators. Denoting by X the value of any indicator, each corresponding index is computed using a formula taking into account the actual value of the indicator and fixed minimum and maximum values. The formula is such that for each country, the value of each index is between zero and one. That is, for any given country, the indices are computed as Index = (Actual X – Minimum X)/(Maximum X – Minimum X).

- Life expectancy. The first index is that of life expectancy at birth, for which the maximum and minimum values are respectively 25 and 85 years.
- Educational attainment. The second index is that of educational attainment. It is itself a weighted average of two components. The first component is the adult literacy rate index for which the minimum and maximum values are 0 and 100 percent. The second component is the combined gross enrolment ratio index for primary, secondary, and tertiary education, with minimum and maximum values also fixed at 0 and 100 percent. In the HDI calculation, the adult literacy index and the combined gross enrolment ratio index are given equal weight, so that the educational attainment index is simply the arithmetic mean of its two components.
- Per capita income. The third index is that of the logarithm of real GDP per capita measured using Purchasing Power Parity values in U.S. dollars, with the minimum and maximum

values set at log(100) and log(40,000). According to the UNDP report, "income enters into the HDI as a surrogate for all the dimensions of human development not reflected in a long and healthy life and in knowledge—in a nutshell, it is a proxy for a decent standard of living." It is worth noting that the way in which income enters in the HDI index has been modified for the UNDP's 1999 report as compared to previous reports.

- The HDI index is computed as the arithmetic mean of the three indices. Real GDP, life expectancy, and educational attainment are thus given equal weights of one third in the HDI.

The LAC region performs better in terms of the Human Development Index than in terms of monetary poverty. Table 1.12 provides summary statistics for the HDI and its underlying indices and indicators. The performance of LAC is relatively good. For example, despite having higher poverty than Eastern Europe and the Commonwealth of Independent States (Table 1.11), the LAC region has the same level of human development according to the HDI. As will be discussed in chapter 3, the performance of LAC in non-monetary indicators of well-being is mostly in line with expectations given its level of economic development terms. One exception is educational attainment (secondary school enrollment specifically), which is below what could be expected for LAC's level of development (this is discussed in chapter 3).

Table 1.12. The Human Development Index and Its Underlying Indices and Indicators by Region, 1997

	World	OECD & similar countries	LAC	Asia & Pacific	Arab States	Eastern Europe and CIS	Sub-Saharan Africa
Original variables							
Life expectancy	66.67	77.12	69.46	66.20	65.58	68.68	48.88
Adult literacy	76.53	97.62	86.96	70.72	58.32	98.67	58.14
Gross enrollment	66.19	89.25	73.02	61.69	59.6	75.49	44.23
GDP per capita (US $)	6321	22515	6869	2849	4137	4228	1533
Indices							
Life expectancy	0.70	0.87	0.74	0.69	0.68	0.73	0.40
Educational attainment	0.73	0.95	0.82	0.68	0.59	0.91	0.54
GDP	0.60	0.90	0.70	0.53	0.58	0.61	0.40
HDI	0.68	0.90	0.75	0.63	0.62	0.75	0.45

Source: Estimates from UNDP (1999) data. For some regions, our classification differs from the UNDP report.

World Bank data on selected non-monetary indicators suggests that despite persistent poverty, the LAC region has improved over time in other dimensions of social welfare. The relative lack of progress on income poverty rates may not reflect adequately the changes in well-being felt by the LAC population over time. As shown in Table 1.13, the rate of adult illiteracy in LAC has decreased from 16.33 percent in 1985 to 12.19 percent in 1995. The gross secondary school enrollment rate has increased from 47.7 percent to 52.85 percent between 1987 and 1995. Although this remains low by international standards, LAC is making some progress. The rate of infant mortality has decreased from 44.07 percent to 29.94 percent between 1987 and 1997. The life expectancy at birth has increased from 67.49 years to 69.74 years from 1987 to 1997. Finally, the access to safe water has increased from 75.83 percent to 83.40 percent from 1985 to 1993. This suggests that non-monetary measures of poverty may have been more responsive to economic growth and policy interventions than monetary measures.

Figure 1.12 Human Development Index in Latin America, 1997

Table 1.13. Non-Monetary Indicators of Well-Being in Latin America and the Caribbean, 1985–97

Year	1985	1987	1988	1990	1992	1993	1995	1997
Infant mortality (per 1,000)	-	44.07	-	39.02	35.64	-	-	29.94
Life Expectancy at birth, (years)	-	67.49	-	68.17	68.63	-	-	69.74
School enrollment, secondary (% gross)	-	47.7	-	47.83	49.72	-	52.85	-
Safe water (% of population with access)	75.83	-	82.37	-	-	83.40	-	-
Adult illiteracy (% of people 15+)	16.33	-	-	13.72	-	-	12.19	-

Source: Own estimates from World Bank SIMA data base.

Significant progress has also been observed in nutrition indicators. Data from the Third Report on the World Nutrition Situation (ACC/SCN, 1997) suggests that the incidence of stunting has decreased in LAC over the last two decades. Table 1.14 provides estimates of the incidence of stunting, taking minus two standard deviations from the median as the threshold (in a well nourished population, we would expect the incidence of stunting not to exceed 3 percent). The largest progress has been reached in South America Data is also available at the country level from the WHO (1997) Global Database on Child Growth and Malnutrition, DHS, and LSMS surveys. In a majority of countries, nutrition indicators have improved at least somewhat.

Table 1.14. Incidence of Stunting in Latin America and the Caribbean, 1980–95

Year	1980	1985	1990	1995
Middle America and Caribbean	31.6	30.4	29.1	27.8
South America	25.0	21.0	16.9	12.9

Source: ACC/SCN (1997).

On the other hand, other aspects of the quality of life, such as the exposure to crime and violence, may have deteriorated in urban areas. There is a feeling of deterioration in the quality of life in urban areas, which may be related to the erosion in the socialization roles of the family, schools, and the church. This feeling may also be due to exposure to crime and violence, an issue that is starting to receive more emphasis in poverty studies, including World Bank poverty assessments. The poverty assessment of the Caribbean countries, while not offering a precise specification of the linkages involved, suggests that the increase in crime and violence has to do with factors such as crowded housing, female headship, high unemployment, high secondary school dropout rates, and limited access to quality social services. The assessment of Peru also contains a discussion of urban crime and violence. It finds that more than one-third of the population of Lima were victims or witnessed violent acts in 1997. The risk of being exposed to physical aggression in the poorest decile of the income distribution was about double the risk of that in the richest decile. In 20 neighborhoods that were the focus of more intensive analysis, fewer than 10 percent of the poor felt safe. The feelings of personal security were clearly linked to poverty levels, with about four times as many residents of Lima in the richest income decile feeling secure than in the poorest decile. Interviews with residents of poor communities revealed practical solutions such as building sports facilities in an effort to get the young off the streets, organizing parents' training classes, and conducting vocational education.[5]

[5] The proceedings of a 1998 workshop sponsored by The World Bank and the ALOP (a network of NGOs) provide a discussion of challenges associated with urban poverty in LAC, including crime and violence. See the web site of the World Bank, under regions and countries, Latin America and the Caribbean, key sectors: poverty, urban poverty: Results from the Rio workshop.

CHAPTER II: INEQUALITY

Latin American and Caribbean Countries Have High Levels of Income Inequality

Income inequality is high in LAC countries. The high level of inequality in LAC has been extensively documented in a recent report by the Inter-American Development Bank (1998). From the measures of income inequality computed for this report, a few findings stand out:

- The population weighted within country inequality has increased in the LAC region over the period 1986–89, and decreased somewhat thereafter (the decrease is larger for the Theil index), but there is a net increase in inequality for the period under review (Table 2.1).
- As for poverty, the population-weighted changes in inequality in LAC reflect in part the weight of Brazil and Mexico where inequality increased between 1986 and 1989, and then receded only partially. With equal country weights, there is no clear pattern towards an increase or decrease in inequality over time: the outcome depends upon the measure used.
- Not surprisingly, inequality is higher in urban than in rural areas, and higher at the national level than in either urban or rural areas (because the national level estimates take into account the inequality between rural and urban areas in the countries that have national coverage).

Table 2.1: Income Inequality Measures for Latin America and the Caribbean, 1986–96

	Population weighted			*Equal country weights*		
	Theil	Gini	Atkinson	Theil	Gini	Atkinson
National						
1986	0.59	0.54	0.47	0.50	0.51	0.50
1989	0.73	0.58	0.52	0.58	0.53	0.47
1992	0.62	0.55	0.51	0.51	0.51	0.47
1994	0.65	0.56	0.51	0.62	0.54	0.49
1996	0.65	0.56	0.52	0.56	0.52	0.47
Urban areas						
1986	0.55	0.52	0.46	0.48	0.50	0.49
1989	0.68	0.56	0.50	0.56	0.52	0.47
1992	0.57	0.53	0.49	0.49	0.50	0.47
1994	0.61	0.55	0.49	0.56	0.52	0.47
1996	0.61	0.55	0.50	0.54	0.51	0.46
Rural areas						
1986	0.48	0.49	0.39	0.49	0.51	0.47
1989	0.57	0.52	0.42	0.65	0.54	0.47
1992	0.53	0.51	0.45	0.48	0.48	0.42
1994	0.53	0.50	0.43	0.52	0.50	0.43
1996	0.54	0.51	0.44	0.51	0.49	0.41

Source: Own estimates, not taking into account between-country inequality.

Figure 2.1: Income Inequality Measures for Latin American and the Caribbean, 1986-96
Population Weighted, National

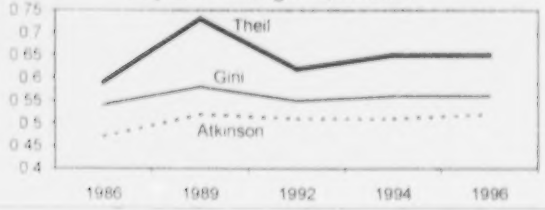


Figure 2.2: Income Inequality Measures for Latin American and the Caribbean, 1986-96
Equal Country Weights, National

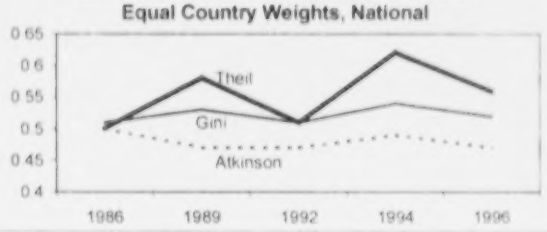


Figure 2.3: Income Inequality Measures for Latin American and the Caribbean, 1986-96
Population Weighted, Urban

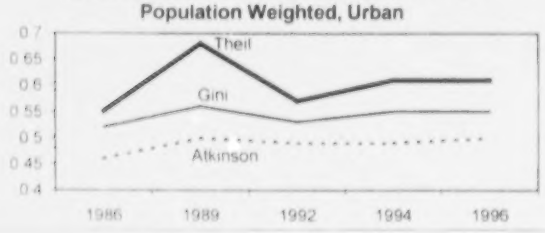


Figure 2.4: Income Inequality Measures for Latin American and the Caribbean, 1986-96
Equal Country Weights, Urban

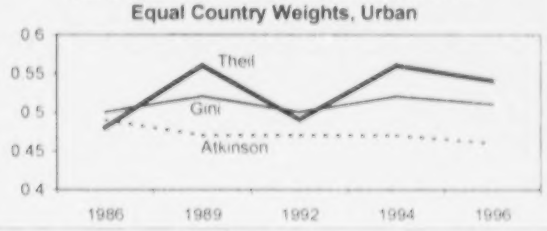


Figure 2.5: Income Inequality Measures for Latin American and the Caribbean, 1986-96
Population Weighted, Rural

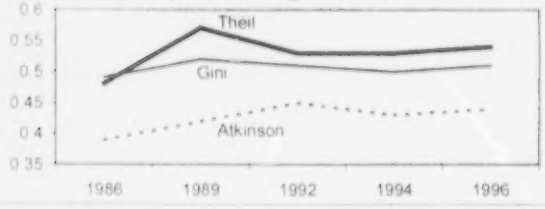
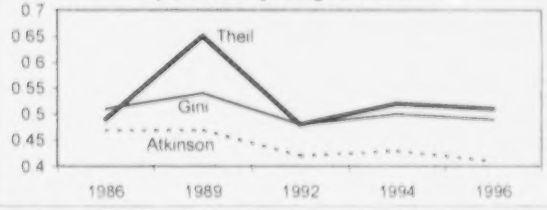


Figure 2.6: Income Inequality Measures for Latin American and the Caribbean, 1986-96
Equal Country Weights, Rural



As for poverty, there are differences in the changes in inequality over time depending on the country. Inequality in Brazil and Mexico increased between 1986 and 1989 before leveling off or decreasing. Chile and Paraguay experienced increasing inequality, although in Chile the low baseline for 1986 may reflect data problems. In Argentina, Colombia, Ecuador, Uruguay, and Republica Bolivariana de Venezuela, inequality has been more stable (some indices suggest an increase, others a decrease). In Bolivia, Honduras, and the Dominican Republic, there is a decrease in inequality over time. As was the case for poverty measures, the reader is advised to consult country-specific studies before reaching conclusions regarding any specific country performance.

Table 2.2: Income Inequality Measures by Country, 1986-96

	Theil	*Gini*	*Atkinson*		*Theil*	*Gini*	*Atkinson*
Argentina				Ecuador			
1986	0.51	0.50	0.68	1986	0.47	0.49	0.46
1989	0.68	0.58	0.73	1989	0.36	0.44	0.33
1992	0.48	0.51	0.65	1992	0.48	0.50	0.44
1995	0.52	0.52	0.61	1995	0.53	0.51	0.46
1996	0.53	0.53	0.64	1996	0.50	0.51	0.54
Bolivia				Honduras			
1986	0.56	0.54	0.60	1986	0.64	0.59	0.62
1989	0.76	0.63	0.64	1989	0.8	0.6	0.58
1992	0.49	0.50	0.41	1992	0.63	0.57	0.58
1995	0.58	0.53	0.41	1995	0.67	0.58	0.57
1996	0.52	0.51	0.40	1996	0.62	0.55	0.53
Brazil				Mexico			
1986	0.74	0.59	0.52	1984	0.42	0.47	0.33
1989	0.89	0.64	0.59	1989	0.61	0.52	0.39
1992	0.71	0.59	0.59	1992	0.56	0.53	0.39
1995	0.74	0.61	0.59	1994	0.58	0.53	0.39
1996	0.75	0.61	0.60	1996	0.55	0.52	0.38
Chile				Paraguay			
1987	0.36	0.44	0.30	1986	0.41	0.47	0.33
1989	0.83	0.59	0.46	1989	0.32	0.43	0.27
1992	0.58	0.53	0.43	1992	0.35	0.44	0.34
1995	0.75	0.57	0.47	1995	0.45	0.49	0.35
1996	0.83	0.58	0.47	1996	0.47	0.47	0.32
Colombia				Uruguay			
1986	0.64	0.57	0.68	1981	0.35	0.43	0.29
1989	0.55	0.54	0.54	1989	0.36	0.42	0.27
1992	0.63	0.57	0.67	1992	0.33	0.42	0.27
1995	0.75	0.56	0.57	1995	0.33	0.43	0.29
1996	0.69	0.56	0.58	1996	0.35	0.44	0.30
DR				Venezuela, R.B. de			
1986	0.53	0.53	0.66	1986	0.49	0.50	0.57
1989	0.53	0.52	0.43	1989	0.41	0.47	0.51
1992	0.54	0.51	0.41	1992	0.38	0.46	0.49
1995	0.62	0.55	0.62	1995	0.43	0.48	0.40
1996	0.42	0.48	0.35	1996	0.48	0.50	0.47

Source: Own estimates. Some countries have urban data only (see Table 2.3 for national surveys).

Table 2.3: Urban Inequality Measures for Countries with National Coverage, 1986–96

	Theil	*Gini*	*Atkinson*		*Theil*	*Gini*	*Atkinson*
Brazil				Honduras			
1986	0.68	0.57	0.49	1986	0.60	0.56	0.63
1989	0.82	0.62	0.56	1989	0.74	0.57	0.59
1992	0.65	0.57	0.54	1992	0.55	0.54	0.59
1995	0.69	0.59	0.56	1995	0.58	0.54	0.56
1996	0.69	0.59	0.57	1996	0.55	0.51	0.54
Chile				Mexico			
1987	0.30	0.41	0.27	1984	0.36	0.44	0.29
1989	0.70	0.55	0.42	1989	0.57	0.50	0.36
1992	0.57	0.53	0.43	1992	0.50	0.50	0.35
1995	0.74	0.57	0.47	1994	0.52	0.51	0.36
1996	0.81	0.57	0.47	1996	0.50	0.49	0.34
DR				Venezuela, R.B. de			
1986	0.47	0.50	0.63	1986	0.46	0.49	0.57
1989	0.48	0.49	0.41	1989	0.39	0.46	0.51
1992	0.54	0.51	0.44	1992	0.37	0.45	0.48
1995	0.67	0.58	0.66	1995	0.42	0.47	0.40
1996	0.43	0.48	0.36	1996	0.48	0.50	0.46

Source: Own estimates.

Table 2.4: Rural Inequality Measures for Countries with National Coverage, 1986–96

	Theil	*Gini*	*Atkinson*		*Theil*	*Gini*	*Atkinson*
Brazil				Honduras			
1986	0.54	0.52	0.42	1986	0.41	0.51	0.50
1989	0.72	0.58	0.50	1989	0.51	0.52	0.47
1992	0.67	0.57	0.59	1992	0.51	0.51	0.49
1995	0.66	0.56	0.54	1995	0.67	0.57	0.54
1996	0.68	0.57	0.57	1996	0.53	0.50	0.45
Chile				Mexico			
1986	0.59	0.54	0.42	1984	0.39	0.45	0.29
1989	1.36	0.73	0.64	1989	0.37	0.44	0.29
1992	0.53	0.48	0.35	1992	0.39	0.44	0.28
1995	0.62	0.51	0.38	1994	0.33	0.42	0.26
1996	0.78	0.54	0.42	1996	0.39	0.45	0.30
DR				Venezuela, R.B. de			
1986	0.57	0.54	0.68	1984	0.46	0.48	0.53
1989	0.58	0.53	0.45	1989	0.37	0.44	0.45
1992	0.41	0.46	0.31	1992	0.35	0.44	0.47
1995	0.45	0.48	0.52	1994	0.38	0.44	0.34
1996	0.33	0.43	0.30	1996	0.37	0.46	0.41

Source: Own estimates.

High levels of inequality contribute to high levels of poverty in several ways. The high levels of inequality observed in LAC are detrimental to the poor for at least three reasons:

- First, at any given level of economic development, higher inequality implies higher poverty. Indeed, higher inequality implies that a smaller share of total income is obtained by those at the bottom of the distribution, which generates poverty. According to the Inter-American Development Bank (1998), if LAC's income distribution were no different from that of Africa, poverty in LAC could be reduced by half. If the LAC distribution of income were similar to that of OECD countries, poverty could be reduced by two thirds.
- Next, higher inequality today may reduce future growth, and thus affect future poverty reduction. According to the induced-growth argument, higher initial inequality may result in lower subsequent growth, and thereby in less poverty reduction. The negative impact of inequality on growth may be due to various factors. Economic distortions hampering growth may result from redistributive policies necessary to reduce inequality and poverty. Moreover, access to credit and other resources may be concentrated in the hands of privileged categories, thereby preventing the poor to invest.
- Finally, higher levels of inequality may reduce the benefits of growth for the poor. Inequality may reduce the prospects of the poor of escaping poverty through growth because the higher the initial inequality, the lower the share of the poor in the benefits of growth. If a single person has all the resources, then whatever the growth, poverty will never be reduced through growth. The higher the inequality, the less elastic poverty will be to economic growth.

Independently of its impact on poverty, inequality has a direct negative impact on welfare. According to the relative deprivation theory, individuals do not assess their levels of welfare only with respect to their absolute levels of consumption or income. They also compare themselves with others. Thus, for any given level of income in a country, high inequality has a direct negative impact on welfare.

Sources of Income and Consumption Contribute to Inequality in Different Ways

In absolute terms, most of the inequality in per capita income is due to the contribution of labor income because labor income represents a large share of total per capita income. In absolute terms, when using the Gini index as the measure of inequality, the contribution of an income source to inequality in total income is the product of the source's share in total income (S_i), Gini correlation with total income (R_i), and the source's Gini (G_i), as explained in Box 2.1. Most surveys for LAC are labor surveys which include a limited number of sources of income. The main sources are listed in Table 2.5. In terms of labor income, one can differentiate between wages and salaries from a principal occupation, wages and salaries from a secondary occupation, and labor income from self-employment. Together, the absolute contribution from labor income account for about three fourths of the Gini in total income in most countries. The rest of inequality is related to pensions, transfers, income from capital, and other sources.

Table 2.5: Source Decomposition of Gini Index: Absolute Contributions, 1995

	Arg.	Bolivia	Brazil NC	Brazil SE	Brazil NE	Brazil S	Chile	Col.	Py.	Uy.	Ven., R.B. de
	Labor income										
Primary	0.271	0.229	0.272	0.248	0.243	0.224	0.165	0.240	0.163	0.183	0.270
Secondary		0.027	0.018	0.014	0.022	0.013	0.004	0.006	0.022	0.020	
Self-employment	0.161	0.218	0.038	0.029	0.033	0.040	0.294	0.225	0.328	0.115	0.172
	Other sources of income										
Pensions	0.071	0.021	0.004	0.007	0.009	0.009	0.060		0.017	0.078	0.000
Transfers	0.008	0.039	0.002	0.002	0.005	0.003			0.009	0.007	
Capital	0.014		0.020	0.028	0.016	0.028	0.050		0.024	0.030	0.001
Other	0.001	0.001	0.245	0.248	0.293	0.256	0.007	0.099	0.012	0.000	0.035
	Total per capita income										
Overall Gini	0.525	0.527	0.600	0.576	0.622	0.573	0.580	0.571	0.576	0.433	0.478

Source: Own estimates. A blank cell indicates that the survey does not have that income source in 1995. The definition of the sources depend on the survey. In Brazil, the "other sources" represent a disproportionate component of total inequality and may actually account for sources of income related to self-employment. There are minor differences (less than 1 percent) for some countries in the overall Gini in Table 2.5 as compared to those in Table 2.2 due to the use of a different statistical package to conduct the decompositions.

BOX 2.1: ANALYZING SOURCE DECOMPOSITIONS OF THE GINI INDEX OF INEQUALITY

To analyze the impact of various sources of income on inequality in per capita income, one can use a source decomposition of the Gini index proposed by Lerman and Yitzhaki (1985; see also Garner, 1993 for an application to inequality in consumption rather than income). Denote total per capita income by y, the cumulative distribution function for total per capita income by $F(y)$, and the mean total per capita income across all households by μ_y. The Gini index can be decomposed as follows:

$$G_y = 2\,cov[y, F(y)]/\mu_y = \Sigma_i S_i R_i G_i$$

where G_y is the Gini index for total income, G_i is the Gini index for income y_i from source i, $S_i = \mu_i/\mu_y$ is the share of total income obtained from source i, and R_i is the Gini correlation between income from source i and total income. The Gini correlation is defined as $R_i = cov[y_i, F(y)] / cov[(y_i, F(y_i)]$, where $F(y_i)$ is the cumulative distribution function of per capita income from source i. The Gini correlation R_i can take values between –1 and 1. Income from sources such as income from capital which tend to be strongly and positively correlated with total income will have large positive Gini correlations. Income from sources such as transfers tend to have smaller, and possibly negative Gini correlations. The overall (absolute) contribution of a source of income i to the inequality in total per capita income is thus $S_i R_i G_i$.

The above source decomposition provides a simple way to assess the impact on the inequality in total income of a marginal percentage change equal for all households in the income from a particular source. As proven by Stark, Taylor, and Yitzhaki, (1986), the impact of increasing for all households the income from source i in such a way that y_i is multiplied by $(1 + e_i)$ where e_i tends to zero, is:

$$\frac{\partial G_y}{\partial e_i} = S_i(R_i G_i - G_y)$$

This equation can be rewritten to show that the percentage change in inequality due to a marginal percentage change in the income from source i is equal to that source's contribution to the Gini minus its contribution to total income. In other words, at the marginal level, what matters for evaluating the redistributive impact of income sources is not their Gini, but rather the product $R_i G_i$ which is called the pseudo Gini. Alternatively, denoting by $\eta_i = R_i G_i / G_y$ the so-called Gini elasticity of income for source i, the marginal impact of a percentage change in income from source i identical for all households on the Gini for total income in percentage terms can be expressed as:

$$\frac{\partial G_y / \partial e_i}{G_y} = \frac{S_i R_i G_i}{G_y} - S_i = S_i(\eta_i - 1)$$

Thus a percentage increase in the income from a source with a Gini elasticity η_i smaller (larger) than one will decrease (increase) the inequality in per capita income. The lower the Gini elasticity, the larger the redistributive impact. The same decomposition can be applied to per capita consumption and its sources.

For policy purposes, it is the marginal rather than the absolute contribution of an income source to inequality that matters. The marginal contribution to inequality of an income source is a function of the source's share in total income and, more importantly, the source's *Gini* income elasticity (see Box 2.1 for a definition). A Gini elasticity larger (smaller) than one implies that an infinitesimal increase in the income from that source will result in higher (lower) overall inequality. In other words, the lower the Gini elasticity, the larger the redistributive impact of a source. The Gini elasticities of the income sources are provided in Table 2.6. The following observations can be made:

- Most Gini elasticities for wages and salaries from primary income sources are slightly inequality decreasing. The elasticities are close to one because of the large part of income represented by this source, and they are smaller than one because of the existence of other less equally distributed income sources. Labor income from a secondary occupation and self-employment are inequality increasing. This suggests that households with members having a secondary occupation and/or self-employment earnings are better off on average than households with members having earnings only from one primary occupation.
- Pensions tend to be inequality increasing, although there are a few exceptions (in Chile and Uruguay, the Gini elasticity is smaller than one). This suggests that those households that benefit from pension schemes tend to be better off than others.
- The transfers recorded in the surveys are likely to be mostly from public sources, and they tend to be inequality decreasing as they should be (the only exception is that of Bolivia).
- Not surprisingly, income from capital is inequality increasing. Those households who do have capital investments (and thereby capital income) are typically better off.

Table 2.6: Source Decomposition of Gini Index: Gini Income Elasticities, 1995

	Arg.	Bolivia	Brazil NC	Brazil SE	Brazil NE	Brazil SO	Chile	Col.	Py.	Uy.	Ven., R.B. de
	Labor income										
Primary	0.93	0.958	1.013	0.932	1.071	0.941	0.726	0.871	0.750	0.901	0.982
Secondary		1.287	1.327	1.371	1.379	1.337	0.682	0.845	1.116	1.480	
Self-employment	1.193	0.986	1.314	1.413	0.979	1.396	1.264	1.139	1.187	1.216	1.053
	Other sources of income										
Pensions	0.921	1.055	1.292	1.259	1.292	1.164	0.909		1.030	0.882	1.029
Transfers	0.656	1.186	0.638	0.812	0.704	0.971			0.480	0.468	
Capital	1.469		1.221	1.345	1.326	1.345	1.585		1.392	1.763	1.433
Other	0.632	0.876	0.923	0.990	0.921	0.967	0.430	1.102	1.243	-0.053	0.903

Source: Own estimates. A blank cell indicates that the survey does not have that source.

Over time, pensions have become more inequality increasing, and transfers more inequality decreasing. Table 2.7 provides the changes over time (from 1989 to 1995) in the marginal impact of the income sources on inequality as measured by the Gini elasticities. No trend can be found for labor and capital income. But pensions have become more inequality increasing over time (a worrying trend), while transfers have become more inequality reducing (a welcome trend). More work on these trends could shed light on the distributional impacts of the reforms that have been implemented in LAC countries for both pensions and transfers.

Table 2.7: Source Decomposition of Gini Index: Change in Gini Elasticities, 1989–95

	Arg.	Bolivia	Brazil NC	Brazil SE	Brazil NE	Brazil SO	Chile	Col.	Py.	Uy.	Ven., R.B. de
	Labor income										
Primary	-0.025	-0.044	0.024	-0.034	0.078	-0.033	-0.034	-0.056	-0.065	0.011	0.015
Secondary		0.089	0.044	0.047	0.155	-0.060	-0.150	-0.133	-0.349	0.067	
Self-employment	0.040	-0.034	0.239	0.252	0.108	0.241	0.656	0.064	0.110	-0.141	-0.014
	Other sources of income										
Pensions	0.122	0.331	0.528	0.447	0.373	0.328	0.246		-0.279	0.216	
Transfers		-0.120	-0.280	-0.199	-0.235	-0.034			-1.119	-0.097	
Capital	-0.185		0.032	-0.112	-0.037	0.007	0.199		-0.569	-0.048	
Other	-0.404	-0.010	0.159	0.178	0.001	0.131	-0.896	0.009	-0.060	-1.662	

Source: Own estimates. A blank cell indicates that the survey does not have that source. Most comparisons over time are for 1989 and 1995, but in some cases the comparison is between 1992 and 1995.

In Mexico, the level of detail in the survey provides for a more precise analysis of the contribution of various sources of income to inequality in total per capita income. The Gini elasticities for the various income sources in Mexico are provided in Table 2.8 at the national, urban, and rural levels. Sources related to assets (financial assets, ownership of houses, land, machinery, and other assets) tend to be inequality increasing. As was observed for other LAC countries, pensions also tend to be slightly inequality increasing. Labor income sources and land rentals are inequality neutral. Gifts (which relate in part to remittances), agricultural and some other types of production, as well as public transfers tend to be inequality reducing. The inequality reducing impacts of stipends from institutions (educational for the most part) and of Procampo cash payments to farmers (see Box 3.1) are strong, with the national Gini elasticity for Procampo transfers much larger nationally than in both urban and rural areas, essentially because the majority of the transfers go to rural areas which are poorer than urban areas (the national elasticity is not a weighted average of the urban and rural elasticities). Note however that the impact of Procampo on inequality has been found to be somewhat less strong in other Mexican surveys, and also less strong than other social programs of the Government of Mexico.

Table 2.8: Source Decomposition of Income Gini in Mexico: Gini Elasticities, 1996

	Nation	*Urban*	*Rural*		*Nation*	*Urban*	*Rural*
Inequality increasing sources				**Inequality neutral sources**			
Sale of stocks	1.885	1.951	1.991	Small business, commercial	1.055	0.971	1.340
Mortgage and life insurance	1.668	1.662	2.039	Rent received for land	1.023	1.065	1.479
Rent received for housing	1.616	1.611	1.736	Labor income	0.953	0.910	0.928
Sale of houses and land	1.613	1.735	1.797	Other sources of income	0.939	0.953	0.858
Interest income	1.612	1.644	1.274	**Inequality decreasing sources**			
Income from cooperatives	1.523	1.561	1.849	Agricultural production	0.903	1.593	0.672
Sale of machinery	1.499	1.636	1.304	Gifts from within the country	0.878	0.945	0.754
Indemnities	1.487	1.420	2.002	Small business, industrial	0.844	0.790	1.047
Other capital income	1.347	0.653	1.953	Remittances from abroad	0.734	0.782	1.218
Loans and investments	1.325	1.378	1.518	Other types of production	0.731	0.665	1.349
Income from services provided	1.176	1.131	1.065	Stipends from institutions	0.123	0.371	0.070
Pension and retirement	1.154	1.055	1.633	Income from Procampo	0.103	0.633	0.607

Source: Own estimates.

Still in Mexico, the data available allows for an analysis of the impact on inequality in total per capita consumption of changes in the prices and/or taxes of commodities. The impact on inequality of small changes in prices or taxes on commodities can be analyzed with the tools presented in Box 2.1. An increase in the price or tax of a source of consumption whose Gini elasticity is larger (smaller) than one will decrease (decrease) the inequality in per capita consumption. Consumption sources and their Gini elasticities in Mexico are given in Table 2.9. Expenditures for culture and leisure, private transportation, communications, housing expenses, and education tend to be inequality increasing. Expenditures for clothing, auto-consumption, energy, tobacco and alcohol, domestic material, and some beverages are inequality neutral. Expenditures for water and most food items are inequality decreasing, as are (somewhat surprisingly) health expenditures. Two government means-tested programs (Liconsa-subsidized milk and Tortibono-free tortilla) are highly redistributive (even though it has been documented that leakage to the non-poor in the two programs is substantial).

Table 2.9: Source Decomposition of Consumption Gini in Mexico: Gini Elasticities, 1996

	Nation	*Urban*	*Rural*		*Nation*	*Urban*	*Rural*
Inequality increasing sources				**Inequality decreasing sources**			
Other expenses	1.578	1.558	1.766	Water	0.918	0.791	0.987
Culture and leisure	1.549	1.456	1.699	Cleaning	0.913	0.867	0.854
Private transport	1.526	1.474	1.806	Meat and fish	0.750	0.605	0.977
Post, telegraph, phone	1.384	1.246	1.605	Health expenditures	0.650	1.144	1.324
Furniture, tools	1.357	1.306	1.738	Public transport	0.612	0.432	0.983
Imputed rent and charges	1.125	0.998	1.019	Cheese , oils, etc	0.488	0.419	0.604
Education	1.181	1.082	0.868	Vegetables and fruits	0.478	0.431	0.545
Inequality neutral sources				Cereals	0.463	0.435	0.580
Other food and drinks	1.072	1.004	1.090	Other kinds of milk	0.398	0.252	0.944
Tobacco and alcohol	1.053	1.090	1.003	Sugar, salt, etc	0.340	0.383	0.459
Pasteurised milk	1.044	0.851	1.293	Tortilla	0.120	-0.126	0.732
Auto consumption	1.039	1.005	0.934	Liconsa milk (subsidized)	-0.343	-0.783	0.417
Clothes and shoes	1.008	0.986	1.006	Tortibono (free tortilla)	-0.666	-1.042	0.341
Domestic material	0.991	1.029	1.175	Corn flour	-0.841	-0.262	-0.154
Electricity	0.952	0.842	1.043				

Source: Own estimates.

The results from source decompositions of the Gini index of inequality can be visualized graphically. Figures 2.7 and 2.8 help in interpreting the results of the decompositions. The share of income or consumption of a source is represented on the vertical axis. The Gini elasticity is represented on the horizontal axis. All sources on the left of the vertical line (crossing the horizontal axis at the unitary value of the Gini elasticity) are inequality decreasing at the margin, while sources on the right side of the vertical line are inequality increasing. Government programs such as Procampo, other transfers, and subsidies are on the far left, which indicates their redistributive impact.

Figure 2.7: National Gini Decompostion by Source of Income Inequality, Mexico, 1996

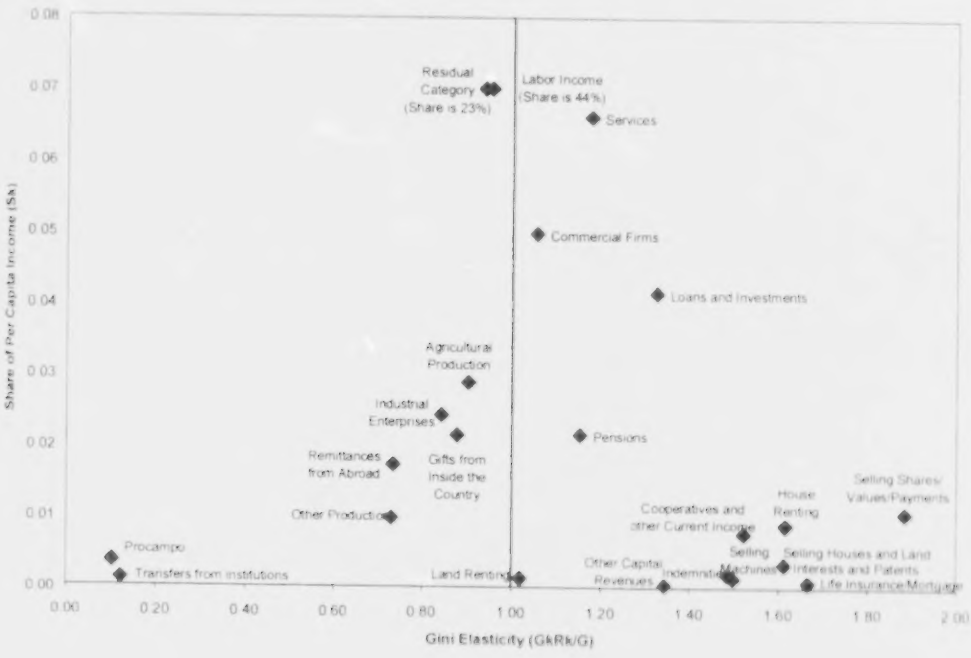
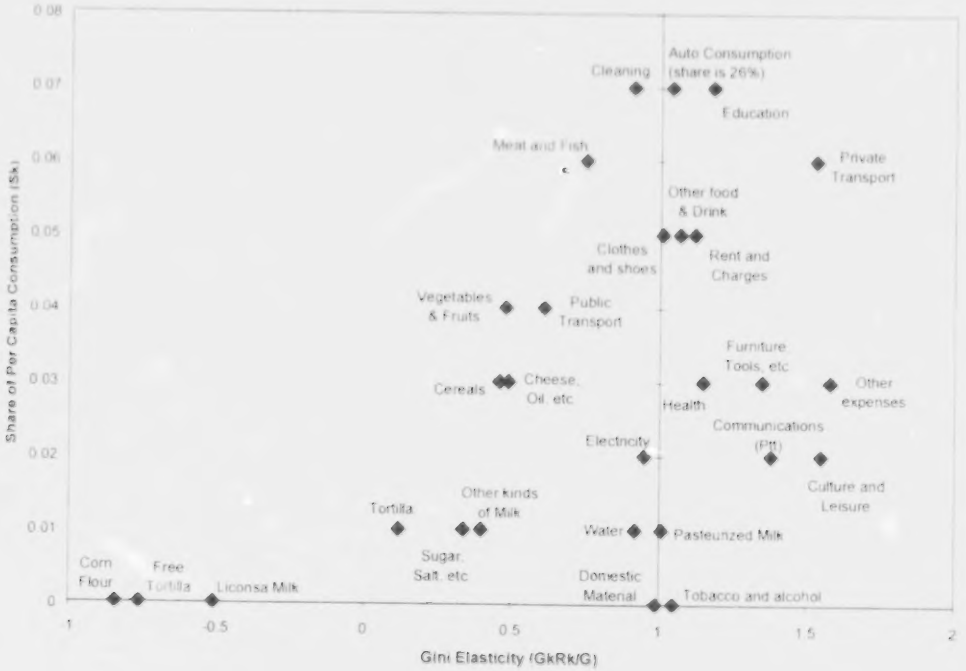


Figure 2.8: National Gini Decomposition by Source of Consumption Inequality, Mexico 1996



BEST COPY AVAILABLE

The Impact of Education on Income Inequality May Not be as Large as Believed

According to the conventional wisdom, education is a key driver of inequality. This conventional wisdom is documented in the recent report by the Inter-American Development Bank (1998), according to which the following story can be told about the determinants of inequality in LAC (and, for that matter, in other regions). First, household inequality is strongly related to earnings inequality, simply because earnings (wages and salaries, or income from self-employment) represent the bulk of household income. Next, earnings inequality itself is in large part due to the unequal distribution of schooling, which affects both the probability to work and the expected wages when working. Finally, differences in schooling also influence fertility rates and family structure, which have a strong impact on per capita income. This framework is useful in relating education, fertility, and labor force participation to income inequality. Yet, the fact that the causal links may be at work in a variety of ways implies that many of the outcomes are jointly determined, which makes policy interventions far from straightforward.

Inequality decompositions by group confirm that education is a key driver of earnings inequality. As will be discussed in more details in chapter 4, education, experience/age, and employment are among the main variables that are traditionally used for explaining differences in individual earnings, as well as in per capita income at the household level.

- According to decompositions of the inequality in individual earnings from wages, salaries, and self-employment, the impact of education on inequality is much stronger than the impact of experience. In Table 2.10, the level of the between group component of the Theil index of inequality is much larger for education than for experience (in each case, five groups were obtained through aggregation so that the results are not influenced by the number of groups).
- The same observation holds for decompositions of household per capita income inequality (not shown in the Table). Education appears to be key, in that inequality between education groups (according to the household head) is much larger than between occupation groups.[1]

Table 2.10. Within- and Between-group Inequality for Individual Earnings, Theil, 1995

		Arg.	*Bol.*	*Chile*	*Col.*	*Urugy.*	*Ven., RB de*
Full sample	Theil index	0.362	0.642	0.735	0.667	0.398	0.340
Schooling decomp.	Within group	0.296	0.511	0.598	0.526	0.358	0.279
	Between group	0.066	0.131	0.137	0.141	0.041	0.061
Experience decomp.	Within group	0.351	0.618	0.716	0.661	0.380	0.336
	Between group	0.011	0.024	0.018	0.005	0.018	0.004

Source: Own estimates.

However, such exercises overstate the impact of education on earnings inequality. Statistical decompositions suffer from omitted variable bias since they do not take into account the correlation between education and other variables affecting income inequality. Even when regressions are used to estimate the contribution of variables to inequality, omitted variable bias may persist. Using data from Brazil, Lam and Schoeni (1993) find that adding the schooling level of parents in wage regressions wipes out 25 percent of the returns from education. Apart

[1] A detailed analysis of the impact of education on earnings is provided in World Bank (2000). The study shows, among others, that despite an improvement in average levels of schooling between 1988 and 1997, the distribution of education has deteriorated, and the returns to schooling have become steeper. It is argued in the report that technical education could be an alternative for the individuals who face a high opportunity cost for pursuing their formal education.

from education, other household variables matter for inequality, including geographic location. Wodon (1999b; see also Wodon, 2000a, for the methodology) uses conditional measures of between group inequality to estimate the impact of household characteristics on income inequality. In Mexico, the education of the head remains the strongest determinant of inequality as measured by conditional between group Ginis. The contribution of education to inequality is also rising over time in both the urban and the rural sectors. Yet, area characteristics as captured by the coefficients of the geographic dummies in log income regressions also contribute strongly to inequality in both urban and rural areas, with their measures of conditional between group inequality representing between 15 and 25 percent of the Ginis in the two sectors. Traditional inequality decompositions do not control for these factors.

Moreover, cross-country evidence does not corroborate the role of education. Cross-country regressions do not suggest such an important role for education in the results of the report by the Inter-American Development Bank (1998). The report insists on the household level on education, but it finds limited evidence of the role of education dispersion at the cross-country level. Both the mean of education and its variance do not appear to have much impact in most regression specifications, and the level of significance is sensitive to the specification.

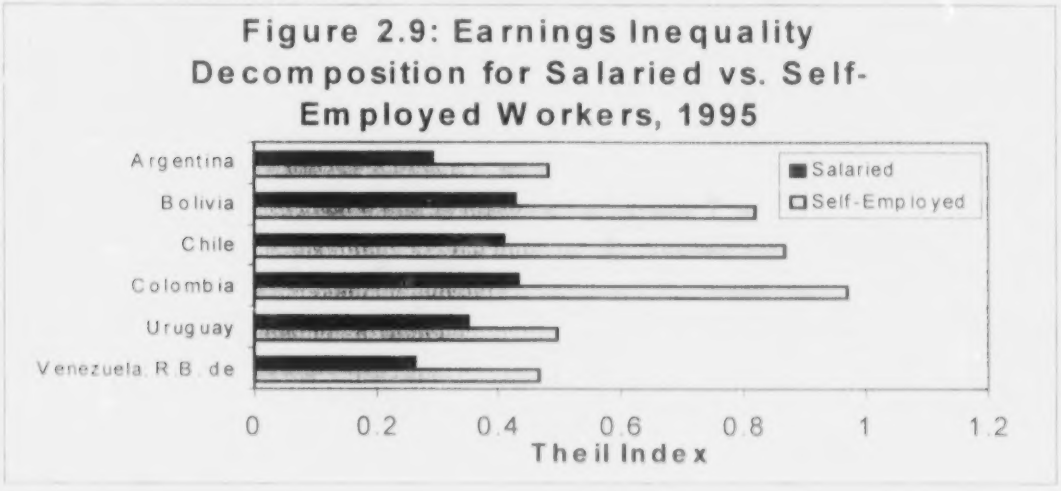
Another Driver of Inequality in Latin America and the Caribbean is the Extent of Self-employment

Inequality is high in LAC in part due to the prevalence of self-employment. Table 2.11 provides a group decomposition of inequality measures for six countries circa 1995. The measures are estimated for the sample of male individuals in the surveys which have positive earnings (including individuals with zero earnings would result in higher inequality measures). While the exact level of inequality depends on the country, inequality is up to twice as high among self-employed individuals than salaried workers. Using the self-employed and the salaried workers as two groups, the between-group decompositions indicate that the within-group component of the inequality indices represent almost the totality of the overall inequality (in Chile however, the between-group component accounts for about ten percent of total inequality). This means that the mean wages in the two sectors are similar. If the level of self-employment in LAC countries was similar to that encountered in most OECD countries, at about 10 percent versus an average of more than 30 percent in the countries in Table 2.11, the within-group component of the inequality indices would be much lower (because within-group inequality is lower among salaried workers), and the inequality indices for LAC would also be lower.

Table 2.11 Earnings Inequality Decomposition for Salaried vs. Self-employed Workers, 1995

	Argentina	*Bolivia*	*Chile*	*Colombia*	*Uruguay*	*Venezuela, R.B. de*
Self-employed	26%	56%	29%	33%	26%	37%
	Inequality measures for all workers with non zero wages					
Theil index	0.362	0.642	0.735	0.667	0.398	0.340
	Inequality measures for all self-employed workers with non zero wages					
Theil index	0.484	0.819	0.867	0.972	0.499	0.470
	Inequality measures for all salaried workers with non zero wages					
Theil index	0.295	0.430	0.411	0.433	0.350	0.264
	Within and between group inequality, with groups defined by type of employment					
Within group	0.355	0.642	0.639	0.653	0.395	0.340
Between group	0.007	0.001	0.096	0.013	0.004	0.000

Source: Own estimates.



Several factors explain why inequality is higher among the self-employed than among salaried workers. As noted by Wodon, Maloney, and Barenstein (2000), self-employment is a risky venture that magnifies earnings inequality.[2] In a regression framework, risk is captured by the residuals. Next, the returns to education tend to be higher among the self-employed. With inequality in the distribution of schooling, this also generates higher inequality. Third, the returns to experience are also higher, which can be related to the survival process at work.

- Risk: The first simulations in Table 2.12 give the value that would be obtained for the Theil indices in both sectors if education and experience were perfect predictors of earnings, i.e. if the error terms were zero. Although many factors are lumped in the error term, including the impact of omitted variables such as ability, the error terms also represent the risks associated with the two sectors. Not surprisingly, the lower inequality measures obtained when taking predicted earnings from the regressions suggest higher levels of risk for the self-employed.
- Education: The second set of simulations nets out the impact of education on earnings by giving to all workers the mean level of schooling in the sample. The difference between the resulting measures of inequality and the original measures captures the impact of education. While large, the impact of education is smaller than that of risk since the simulated measures of inequality are higher than those obtained when using predictions from the regressions.
- Experience: The third set of simulations provide an evaluation of the impact of experience on inequality by giving to all workers the mean experience level in the sample. The fact that the simulated measures are higher than those obtained before underscores the lower impact of experience on inequality, when compared to the impact of education and the error terms.

[2] The arguments from the small firm dynamics literature suggest a higher variance or volatility of earnings among the self-employed (businesses can be driven out of the market). The selection process for survival in the self-employed sector typically leads to a broader distribution of earnings for any given level of human capital, as compared to what would be obtained if workers were all salaried with non-stochastic and smoothly increasing wages. This leads to higher levels of inequality in the self-employment sector. It also implies that standard wage regressions will have less explanatory power in the self-employment sector, as found by Rees and Shah (1986) and Borjas and Broners (1989). In fact, Rees and Shah in the United Kingdom find no significant relationship between self-employed earnings and human capital variables. Their regressions included far more than the basic human capital variables, which prevents a straightforward comparison of their explanatory power in the various sectors.

- Risk and education: Finally, the last simulations are obtained by applying the coefficients of the salaried regression to the members of the self-employment sector and also taking out the residuals. We get levels of inequality similar to those of the first set of simulation for salaried workers, which net out the impact of risk. This means that most of the difference in inequality between the two sectors can be attributed to higher risk, but also higher returns to education in the informal sector (or more precisely, the self-employed sector).

Table 2.12: Inequality Simulations for Salaried vs. Self-employed Workers, 1995

		Arg.	*Bol.*	*Chile*	*Col.*	*Urug.*	*Ven, R.B. de*
Actual values of Theil index	Self employed	0.484	0.819	0.867	0.972	0.499	0.470
	Salaried	0.295	0.430	0.411	0.433	0.350	0.264
Simulation using mean (zero) error	Self employed	0.163	0.212	0.227	0.193	0.128	0.091
	Salaried	0.073	0.110	0.125	0.108	0.091	0.059
Simulation using mean schooling	Self employed	0.314	0.645	0.629	0.690	0.453	0.371
	Salaried	0.197	0.304	0.227	0.240	0.288	0.206
Simulation using mean experience	Self employed	0.485	0.837	0.884	0.989	0.500	0.490
	Salaried	0.287	0.399	0.408	0.431	0.325	0.272
Simulation using returns for salaried	Self employed	0.084	0.076	0.127	0.108	0.094	0.060

Source: Own estimates.

Another Reason for High Inequality in LAC Has to do with Income Mobility

Inequality measures not taking mobility into account tend to over-estimate the extent of inequality. Income mobility implies two distributions (the initial and the final), and a description of the transition process between these two distributions (Yitzhaki and Wodon, 2000; Box 2.2). A mobility index describes this transition process. Sociologists and economists have proposed several mobility indices (e.g., Prais, 1955; Bibby, 1975; Shorrocks, 1978a; Atkinson, 1983; Atkinson and Bourguignon, 1992; Dardadoni, 1993), but these have been developed using properties of transition matrices independently of the concept of inequality. Yet, there are links between the concepts.

- Consider inequality when income is distributed over the life cycle. If one is interested in lifetime income inequality, yearly measures of inequality are inappropriate. Although individuals may have exactly the same pattern of income flow over the life cycle, one will observe inequality simply because the time period used for measurement is too short. In such a case, a mobility index can help in predicting the appropriate level of inequality over a period of time from a series of snapshots at any given point in time.
- Another illustration, which is prevalent in LAC, has to do with the limited period during which income is typically measured in the labor force surveys used for the measurement of inequality. If income is measured for, say, one month only, and if there is a lot of variation in income from month to month (especially for the self-employed), then inequality measures relying on the snapshots available in the labor force surveys will tend to overestimate the underlying inequality that exists on a yearly basis, for example.

Using panel data for a country such as Mexico, it has been shown that the extent of income mobility is very high, so that income inequality measures are overestimated. The Gini index of mobility was applied to rotating panel data on wages from Mexico's urban labor force survey, with 40 cohorts (10 years of data) which are followed for five quarters. The sample for men was divided into six groups using combinations of age (young versus older), headship (household heads versus non-heads), and education level (primary versus higher). This created 240 observations on which measures of inequality and mobility could be estimated.

- The Gini indices of inequality were estimated to be around 0.46 for the 240 observations on average, and the Gini mobility indices from any one quarter to the next were estimated at 0.37 on average. This implies that if the inequality was measured over two quarters rather than one, the decrease in the Gini index could reach several percentage points (Box 2.2).
- Not surprisingly, statistical comparisons indicate that mobility indices are higher for the young than for the old. They are higher for the less well educated (primary level) than for the better educated (secondary or higher). There are no differences according to headship.
- Regression estimates to assess the determinants of mobility confirm the role of age and education, as well as the role of economic growth which tends to increase mobility.

The Gini index of mobility can be applied to other dimensions of welfare as well. This is illustrated using a panel for Mexico's rural areas for 1994 and 1997 in Table 2.13 (Yitzhaki and Wodon, 2000). Inequality and mobility in per capita income, land ownership, and land cultivated are estimated. Because of a few negative values for per capita income (based on inputs for and outputs from farming), the Gini indices of inequality for income are very high, at 0.818 in 1994 and 0.830 in 1997. The corresponding measures for land owned and cultivated are high as well. There is mobility between the two years both in terms of income and in terms of land. The highest level of mobility (0.333) is observed for land cultivated, perhaps because of the impact of the land titling reform which took place at that time. Taking into account mobility, inequality measures would decrease substantially if the two time periods (1994 and 1997) were taken into account instead of basing the inequality measures on one period only.

Table 2.13: Gini Indices of Inequality and Mobility, Rural Mexico, 1994 and 1997

	Income	*Land owned*	*Land cultivated*
Gini index of inequality, 1994	0.818	0.567	0.576
Gini index of inequality, 1997	0.830	0.603	0.628
Symmetric index of mobility	0.264	0.305	0.333

Source: Own estimates.

The analysis of mobility can also help in assessing inequality in multiple dimensions of welfare and horizontal equity. Assume that both income and wealth determine the well-being of a household. Then, the Gini mobility index described can be used to assess inequality in any weighted average of income and wealth indicators without having to specify the weights (see Box 2.2 for details, and Wodon and Yitzhaki, 2000a, for an application to the Human Development Index). Moreover, the Gini index of mobility is also related to measures of horizontal equity. In the literature on taxation (Feldstein, 1976), rank switching has been seen as an undesired property which is the target of horizontal inequity measurement. Measures of horizontal equity are discussed in Atkinson (1979) and Plotnick (1981). But clearly, the same rank switching is also the target of mobility measurement, except that mobility is viewed as a

desired property to have. The information needed for calculating an index of horizontal equity is the same as that needed for an index of mobility. Therefore the Gini indices of mobility are also useful for the analysis of horizontal inequity. It can be shown for example that the Atkinson-Plotnick index of horizontal inequity is a special case of the Gini mobility index, with $AP = (1/2)(1-I_{ba})$, where AP indicates the Atkinson-Plotnick index of horizontal inequity, while b and a represent the distributions before and after the tax reform.

BOX 2.2. THE GINI MOBILITY INDEX

Let (Z_1, Z_2) denote a bivariate income distribution in states 1 (initial) and 2 (final). The first and second moments exist. Define $Y_k=Z_k/\mu_k$ as the income in terms of mean income. Then (Y_1, Y_2) is a bivariate distribution with $\mu_1=\mu_2=1$. The (symmetric) Gini mobility index describes the association between inequality in distributions 1 and 2. The index is such that $S_{12} = S_{21}$. That is, it does not matter which distribution is the original distribution and which is the final. If $F_j(Y)$ is the (marginal) cumulative distribution j, the Gini symmetric index of mobility is defined as:

$$S_{12} = \frac{COV[(Y_1 - Y_2),(F_1(Y) - F_2(Y))]}{COV(Y_1, F_1(Y)) + COV(Y_2, F_2(Y))}$$

The advantage of having symmetry is that the index does not suffer from the index number problem that is typical to directional movement from one state to another. The Gini mobility index can be rewritten as $S_{12}=[G_1(1-\Gamma_{12})+G_2(1-\Gamma_{21})]/[G_1+G_2)]$ where $G_j=2cov(Y_j, F_j(Y))$ and $\Gamma_{js}=cov(Y_j,F_s(Y))/cov(Y_j,F_j(Y))$ is the Gini correlation coefficient which has the following properties: (a) The Gini correlation coefficient is bounded with $1 \geq \Gamma_{js} \geq -1$; (b) If distributions j and s are independent then $\Gamma_{js} = 0$; (c) Γ_{js} is not sensitive to a monotonic transformation of distribution s; (d) Γ_{js} is not sensitive to a linear monotonic transformation of distribution *j*; and (e) In general, Γ_{js} need not be equal to Γ_{sj} and they may even have negating signs. The terms Γ_{sj} and Γ_{js} are the summary statistics of the relevant information included in the transition matrices, provided that the interest is in the impact of the transition process on the Gini coefficient.

- Minimum mobility: If $y_2=t(y_1)$ where $t()$ is a monotonic increasing transformation, then $S_{12}=M_{12}=M_{21}=0$, since by property (c) of the Gini correlation coefficient, $\Gamma_{21}=\Gamma_{12}=1$. This means that if the transition process has not changed the ranking of the units, then the mobility index equals zero. One example would be an economic growth (or shock) that affects all units by a monotonic increase (or affects all individuals without causing changes in ranks).
- Maximum mobility: If there is a total reverse in the ranks, that is, the richest in distribution 1 is the poorest in distribution 2, and so on, then $\Gamma_{12}=\Gamma_{21}=-1$ and $S_{12}=M_{12}=M_{21}=2$.
- Mid-Point: If y_2 and y_1 are statistically independent then $S_{12}=M_{12}=M_{21}=1$.

Consider next two measures of well-being Y_1 and Y_2, and let $Y(\alpha) = \alpha Y_1+(1-\alpha)Y_2$ where $0<\alpha<1$. $Y(\alpha)$ could be the mean income between two periods, or a weighted average between income and wealth. If the weighting parameter α is known, then the Gini of $Y(\alpha)$ can be directly calculated. If α is unknown, it can still be shown that the Gini of $Y(\alpha)$ is bounded by:

$$Max\,[0,\ \alpha G_1 \Gamma_{12} + (1-\alpha) G_2 \Gamma_{21}] \leq G_{Y(\alpha)} \leq \alpha G_1 + (1-\alpha) G_2$$

For example, assume $\Gamma_{12} = \Gamma_{21} = 0.8$. Then $0.8\,[\alpha G_1 + (1-\alpha) G_2] \leq G_{Y(\alpha)} \leq \alpha G_1 + (1-\alpha)$, so that mobility index enables us to put a lower and upper bound on the inequality for the weighted sum. In this sense we can argue that the mobility index improves the ability to predict inequality. The above property facilitates the evaluation of inequality of a weighted distribution when one is unwilling to quantify the weights, as for example when both good health and income determine the well-being on an individual, but the relative weights for each factor are unknown.

CHAPTER III: OPPORTUNITY (I)
BROAD-BASED GROWTH

GROWTH IMPROVES BOTH MONETARY AND NON-MONETARY INDICATORS OF WELL-BEING

The impact of growth on poverty depends in part on the relationship between growth and inequality. The World Bank's 1990 and 2001 WDRs (World Development Reports) on poverty recommends broad-based growth as a privileged path for poverty reduction, provided it is accompanied by policies to promote access to education, health and social services, and by the provision of safety nets. The poverty reduction impact of growth is obvious enough since holding inequality constant, a rise in living standards must lead to lower poverty. However, inequality need not be constant. Moreover, when growth is associated with rising inequality, part of the gains from growth for the poor will be offset by the negative impact of rising inequality. Finally, inequality can itself be detrimental to future growth. The relationship between growth and inequality is therefore central to the impact of growth on poverty. While this relationship has been examined in the literature using worldwide cross-country panel data,[1] the empirical evidence at the national and regional (LAC) levels remains limited.

Traditional methods for analyzing the impact of growth on poverty rest on point estimates of the elasticity of poverty to growth and decompositions of changes in poverty over time. Most of the empirical work on growth and poverty is based on international panel data with growth, poverty, and inequality measures for a large number of countries at a few points in time. Empirical studies focusing on a single country or a small group of countries have relied on less satisfying methodologies (Box 3.1). First, researchers using single surveys have estimated the point elasticity of poverty to growth and inequality using formulae provided by Kakwani (1993) and Kanbur (1987). Although useful for short-term comparative statistics, these elasticities say nothing about the longer-term relationships between growth, poverty, and inequality. Second, following Datt and Ravallion (1992), researchers have decomposed changes in poverty measures over time into changes due to growth and inequality. This is potentially more interesting, but it does rarely provide sufficient evidence for generalization since only a few observations are typically available using these decompositions (N–1 observations at the country level for N surveys).

By building panel models within a region or a country, estimates of the elasticities of poverty and inequality to growth can be estimated. Provided one has state or province level data within a country, or country level data within a region, panel data sets of poverty, mean income, and inequality measures can be constructed in order to estimate the elasticity of poverty to growth and inequality. Creating these panels increases the number of observations that can be used in the analysis. A broad overview of the relationships between poverty, inequality, and growth can then be obtained using the third method outlined in Box 3.1. Denoting by γ and λ the gross and net elasticities of poverty to growth, by β the elasticity of inequality to growth, and by

[1] The potential impact of growth on inequality was analyzed long ago by Kuznets (1955, 1963) who suggested that rural to urban migration would result in an inverted-U relationship between growth and inequality since urban areas have not only higher standards of living, but also higher inequality. Kuznets' views or extensions thereof remain present in the literature today, even though they have been challenged or at least qualified recently.

δ the elasticity of poverty to inequality controlling for growth, we have $\lambda \approx \gamma + \beta\delta$. This method was applied to the poverty measures computed for the countries in our sample (a total of 60 observations, i.e. 12 countries with 5 years per country). The results are provided in Table 3.1.

- Without changes in inequality (as measured by the Gini index), a 1 percent increase in per capita income results at the regional level in a -1.27 percent (γ) decline in the headcount index of extreme poverty. With a regional headcount for poverty at 36.74 percent in 1996, this represents one third of a percentage point decline in the share of the population in poverty (36.74*–0.094=–0.34). This is the gross impact of growth on the headcount index of poverty adjusted for consumption. The net impact (via λ) is almost the same in our case, because the elasticity of inequality to growth (β) is almost zero. The estimates of the net elasticities in Table 3.1 were used for poverty projections in 1998 in the first chapter.
- Note that the elasticities of poverty to inequality (δ) are larger for the poverty gap and squared poverty gap because these measures are more sensitive to inequality among the poor.
- Note also that the elasticities of poverty to growth are larger for extreme poverty than for poverty. Yet since these are elasticities, growth can generate larger reductions in percentage points in the headcount index of poverty than in the headcount index of extreme poverty. This is actually the case because poverty measures are larger than extreme poverty measures.

Table 3.1: Elasticities of Poverty with Respect to Growth and Inequality in LAC

	Poverty			*Extreme poverty*		
	Headcount	*Poverty Gap*	*Squared Poverty Gap*	*Headcount*	*Poverty Gap*	*Squared Poverty Gap*
Net elasticity of poverty to growth (λ)	–0.94	–1.11	–1.19	–1.30	–1.32	–1.33
Gross elasticity of poverty to growth (γ)	–0.93	–1.09	–1.16	–1.27	–1.28	–1.29
Elasticity of poverty to inequality (δ)	0.74	1.22	1.61	1.46	2.11	2.41
Elasticity of inequality to growth (β)	NS	NS	NS	NS	NS	NS

NS denotes an elasticity not statistically significantly different from zero at the 5 percent level (the estimate of the elasticity of inequality to growth is –0.02).
Source: Own estimates.

There is evidence that macroeconomic shocks have especially large negative impacts for the poor, perhaps yielding an asymmetry in the elasticity of poverty reduction to growth. It could be that the increase in poverty that follows a macroeconomic shock is larger than the subsequent reduction in poverty brought about by economic growth. De Janvry and Sadoulet (1999) find evidence for this hypothesis. It has also been argued that households are forced to increase child labor and decrease schooling during shocks. If this is true, shocks may be detrimental not only in the short run, but also in the long run because once a child has left school, she may not go back anymore even though the welfare of the household is improving again. Jacoby and Skoufias (1997) find that child labor helps smooth rural incomes in India. Using data from Peru, Ilahi (1999) finds that although the educational attainment of boys and girls are the same on average, the schooling of girls is more sensitive to household shocks such as changes in adult female employment or the sickness of household members. These and other arguments militate in favor of stable economic growth in order to protect the poor from shocks.

BOX 3.1. IMPACT OF GROWTH AND INEQUALITY ON POVERTY

Method 1: Theoretical elasticities of poverty to growth and inequality. Kakwani (1993) has derived formulae to assess the impact of growth and inequality on poverty using a single cross-section of data. Denoting by $f(Z)$ the probability density of consumption at the poverty line, and by θ the order of the poverty measure P_θ of the FGT (1984) class, the point elasticity of poverty to growth holding inequality constant, which is denoted by η_θ, can be estimated as $\eta_\theta = -Z f(Z)/P_0$ for $\theta = 0$, and $\eta_\theta = \theta(1 - P_{\theta-1}/P_\theta)$ for $\theta \geq 0$. These elasticities are negative since P_θ is monotonically decreasing in θ. To compute the elasticity η_0 for the headcount, an estimate of $f(Z)$ is needed. This estimate can be obtained by computing $f(Z) = 1/[\mu L''(s)]$ where $L''(s)$ is the second derivative of the Lorenz curve with respect to the share of total consumption enjoyed by the poorest share of the population s, and μ is mean consumption. $L''(s)$ can itself be obtained by fitting the curve $L(s) = s - as^\alpha(1-s)^\beta$ where a, α, and β are estimated. This can be done by regressing $\log [s - L(s)]$ on a constant, $\log s$, and $\log (1-s)$. Note that there is a sign typo in the value of $L''(s)$ in terms of a, α, and β as given in Kakwani (1993). The correct value of $L''(s)$ is:

$$L''(s) = as^\alpha(1-s)^\beta\left[\frac{\alpha(1-\alpha)}{s^2} + \frac{2\alpha\beta}{s(1-s)} + \frac{\beta(1-\beta)}{(1-s)^2}\right]$$

If the Lorenz curve shifts in such a way that $L^*(s) = L(s) - \lambda[s - L(s)]$, with $\lambda = 0.01$ corresponding to a one percent increase in the Gini, the elasticity of P_θ with respect to a change in inequality is $\chi_\theta = \eta_\theta(Z - \mu)/Z$ for $\theta = 0$, and $\chi_\theta = \eta_\theta + (\theta\mu P_{\theta-1})/(ZP_\theta)$ for $\theta \geq 0$. The trade-off for poverty reduction between higher growth and higher inequality is the percentage increase in mean consumption needed to compensate for an increase in the Gini of 1 percent, that is: $-\chi_\theta/\eta_\theta$.

Method 2: Empirical decomposition of changes in poverty measures over time. Kakwani's results rely on assumptions such as the parametrization of the Lorenz curve and the nature of its shift. They are also valid for marginal changes only. To account for the contribution of growth and changes in inequality to actual discrete changes in poverty over time, a decomposition proposed by Datt and Ravallion (1992) is often used. Write poverty P^t at time t as a function of mean income μ^t and the Lorenz curve π^t, with $P^t = P(\mu^t, \pi^t)$. The change in poverty between two dates due to growth holding inequality constant is $P(\mu^{t2}, \pi^{t1}) - P(\mu^{t1}, \pi^{t1})$. The impact of a change in inequality at zero growth is $P(\mu^{t1}, \pi^{t2}) - P(\mu^{t1}, \pi^{t1})$. Therefore, one has $P(\mu^{t2}, \pi^{t2}) - P(\mu^{t1}, \pi^{t1}) = [P(\mu^{t2}, \pi^{t1}) - P(\mu^{t1}, \pi^{t1})] + [P(\mu^{t1}, \pi^{t2}) - P(\mu^{t1}, \pi^{t1})] + R$, with the residual R being typically small.

Method 3: Panel estimates. When panel measures of mean income, poverty, and inequality are available, a third method can be used to analyze the relationships between growth, poverty, and inequality. Denoting by G_{kt} the Gini for country (or region) k in time t, by W_{kt} the mean level of (per capita) income, by P_{kt} the poverty measure, one can run regressions on the differences over time in logs as follows (with α_k, ϖ_k, φ_k being country or region fixed or random effects):

$$\Delta\text{Log } G_{kt} = \alpha + \beta\Delta\text{Log } W_{kt} + \alpha_k + \varepsilon_{kt}$$

$$\Delta\text{Log } P_{kt} = \varpi + \gamma\Delta\text{Log } W_{kt} + \delta\Delta\text{Log } G_{kt} + \varpi_k + \nu_{kt}$$

$$\Delta\text{Log } P_{kt} = \varphi + \lambda\Delta\text{Log } W_{kt} + \varphi_k + \eta_{kt}$$

γ and λ are the gross and net elasticities of poverty to growth; β is the elasticity of inequality to growth; δ is the elasticity of poverty to inequality holding growth constant; and $\lambda \approx \gamma + \beta\delta$.

Apart from reducing poverty, growth also improves non-monetary indicators of well-being. As indicated in Table 3.2, economic growth has positive impacts on a wide range of social indicators including infant mortality, enrollment in secondary education, illiteracy, access to safe water, and life expectancy. The table provides estimates of the elasticities of various non-monetary indicators of well-being to growth at various levels of economic development captured by real per capita GDP in U.S. dollars. For example, for countries with a real per capita GDP below $2,500 at 1985 prices, a 1 percentage point in growth is expected to result in a 0.62 percentage point decrease in infant mortality. The impact of growth on infant mortality increases as the level of GDP increases, up to the level of $15,000 at which no more gains in infant mortality are obtained. While the magnitudes of the elasticities depend on the social indicator and level of development, there is no doubt that economic growth is associated with strong non-monetary benefits in terms of education and health performance, as well as access to safe water.

Table 3.2: Impact of Growth on Non-monetary Indicators of Well-being, Elasticities

	Infant Mortality	*Secondary Education*	*Illiteracy*	*Access to Safe Water*	*Life Expectancy*
RGDP<2500	-0.62	1.25	-0.68	0.98	0.15
2500<=RGDP<5000	-1.10	0.74	-1.06	0.47	0.13
5000<=RGDP<10000	-1.25	0.79	-0.66	NS	0.07
10000<=RGDP<15000	-1.90	0.80	NS	NS	0.14
RGDP>=15000	NS	NS	NS	NS	NS
Constant	4.67	2.37	3.86	3.31	3.96

NS denotes an elasticity not statistically significantly different from zero at the 5 percent level.
Source: Own estimates.

LAC's performance is as expected for most indicators given the region's level of development, but secondary school enrollment is low in part due to high income inequality. It can be shown that LAC's performance is roughly in line with its level of economic development for most indicators shown in Table 3.2. However, this is not the case for secondary school enrollment, in part due to high levels of inequality. In order to analyze the impact of inequality over the level of social indicators while controlling for growth, the Gini index of income inequality was included on the right hand side of the panel regressions used to assess the impact of growth on social indicators. The only case in which the Gini index turned out to have a significant negative impact on social indicators was secondary school enrollment. In other words, LAC's higher level of income inequality may contribute to its lower performance in terms of gross secondary school enrollment (more work is needed on this topic however, because of the possibility of endogeneity for some variables which may be determinants of growth.[2])

[2] To obtain the elasticities in Table 3.2, we regressed the social indicators on a spline function of per capita GDP using data from the World Development Indicators and the World Penn Tables. Denoting by SI_{it} the social indicator for country i at time t, and by y_{it} the real per capita GDP in constant dollars of 1985 (Chain index in Penn Tables), by log1 to log5 the GDP splines (1 for less than $2,500; 2 for $2,500 to $5,000; 3 for $5,000 to $10,000; 4 for $10,000 to $15,000; and 5 for more than $15,000), we estimated the fixed effects panel model: $\text{Log}(SI_{it}) = \alpha + \beta_1 \log1_{it} + \beta_2 \log2_{it} + \beta_3 \log3_{it} + \beta_4 \log4_{it} + \beta_5 \log5_{it} + \alpha_i + \varepsilon_{it}$. The β parameters provide the elasticities of the various social indicators to GDP at different levels of economic development. The data available for the regressions varies in quality, with 2,077 observations for infant mortality, 1,505 observations for life expectancy, 1,268 observations for secondary school enrollment, 410 observations for illiteracy, and 391 observations for access to safe water.

In Urban Areas, Informal Employment Has Been Rising

The pattern of economic growth in LAC may not have been broad enough in the past to benefit the poor due to the inadequate functioning of factor (including labor) markets. While growth has had an impact on poverty in LAC, this impact has not been impressive. This is illustrated by the relatively small values obtained for the elasticities of poverty reduction to growth in Table 3.1. According to the 1990 WDR, growth should be broad-based in order to be pro-poor. One of the implicit arguments in many poverty studies in LAC, including the poverty assessments conducted by The World Bank, is that the failure to attain broad-based growth is related to the inadequate functioning of factor markets in the region.[3] In this section, we consider one of the issues: the rise in informal employment and its relationship to poverty.

A rise in informal sector employment has been documented in World Bank poverty assessments, with an assumption that this is a negative trend. In most LAC countries, a third or more of the working population is self-employed (a proxy for informality), about three times the level of OECD countries. The size of the informal sector has been rising over time according to World Bank poverty assessments. The share of informal sector workers in Brazil rose from 40 to 50 percent between the early 1980s and 1990s. New job creation in Peru between 1994 and 1997 was mainly in the urban informal sector—800,000 new jobs in the informal sector compared to fewer than 500,000 in the formal sector. In these and other countries, structural changes in production, such as the increase in subcontracting and flexibility, have played a role, and the rise in informal employment has been associated with poverty. The assessment of El Salvador for example documents the concentration of the urban poor in the informal sector, where hourly earnings are almost 25 percent lower than in the formal sector.[4]

Other observers have also considered the informal sector as generating poverty. It is often assumed that wages are often lower in the informal sector, and that working conditions tend to be harsh. Some argue that in most of Latin America, the largest growth in the informal sector has occurred at the low income end of the sector. According to CEPAL (1996), new jobs have been concentrated in the low productivity sectors, even during periods of economic growth. The

[3] In World Bank poverty assessments (Ayres, 1999), the message is that reforms of labor legislation/regulations are needed in order to reduce the cost of labor and generate employment for the poor in urban areas. The Ecuador assessment describes governmental interference with wage setting in the private sector, including nationwide minimum wages, mandatory wage adjustments, and an array of mandated benefits. Such policies, it is argued, contribute to labor market segmentation and preclude labor from being allocated optimally across different sectors of the economy. The assessment employs a general equilibrium model to demonstrate that reducing labor regulations would have a significant impact on labor demand and thereby benefit the poor. The Trinidad and Tobago assessment also argues that the institutional setting governing employment practices and industrial relations creates incentives for employers to minimize the use of labor and substitute capital in production. One consequence is that workers are hired as casual workers, contract workers, or independent contractors wherever possible, and therefore do not enjoy the benefits available to regular employees. They are subject to intermittent patterns of employment and are even less secure than they would have been in the absence of the law. In Bolivia, the assessment argues that labor regulations create distortions that directly and indirectly affect the poor. The distortions from labor legislation are estimated to increase labor costs by 40–60 percent above the basic wage. The report concludes that the legal framework constrains the labor practices of firms and leads to an inefficient use of factors of production.

[4] An exception to this line of argument appears to be the case of Chile where the World Bank poverty assessment finds that the precariousness of employment had declined since 1987, with the labor market becoming increasingly reliable source of earnings for labor force participants.

growth of the informal sector has therefore been seen as a response to increasing urban poverty. To allow for basic subsistence, women and other members of the household have looked for ways to generate more income (married women and children are present in high proportions in the informal sector). Those in the informal sector lack access to social security and other state organized benefits such as low-income housing. It has also been argued that informal sector employment depresses formal sector wages.

Yet the debate over how to analyze earnings in the informal sector is complex due to the heterogeneity of the sector. World Bank poverty assessments and other studies generally consider the growth of the informal sector as negative, and the goal of policy is usually seen as that of moving more urban workers out of the low-wage informal sector and into the higher-wage formal sector. But for the most part, there is no consideration of the alternative argument that the informal sector contains pockets of thriving entrepreneurial activity, that it may be the sector of choice for some workers, and that it is a highly differentiated sector with considerable internal diversity calling for equally differentiated policy responses on the part of governments. An exception is the poverty assessment of Peru, in which it is explicitly stated that for the self-employed opening micro-enterprises is largely a choice. More generally, as discussed by Maloney (1999) for Mexico, what is important in comparisons of formal versus informal jobs is not the wages, but the levels of utility. People may be willing to pay a premium for flexibility, in which case wages in the formal and informal sector should differ by this premium. As for the lack of participation in social security systems, it could be a rational decision for some workers if the taxes paid for participation do not yield long term benefits for the participants.

Part of the complexity in the debate stems from the fact that the returns to education and experience need not be equal in the formal and informal sectors. As noted by Wodon, Maloney, and Barenstein (2000), the labor and firm dynamics literatures provide reasons for why observed human capital may have different returns in salaried work versus self-employment. Salaried work and self-employment differ in two fundamentally different ways (the rest of this section follows that paper). First, the agency and information asymmetry problems inherent in the employee/employer relation are absent when the firm is comprised of one person, as is the case with self-employment. Second, the self-employed are by definition firms, and hence the returns to human capital in self employment also reflect small firm dynamics. Though there may be many channels through which these differences affect distribution, several have received careful attention in the literature for industrialized countries and are reviewed hereafter.

The returns to education may be higher for the self-employed because of the lack of signaling and screening effects, and hence the lack of incentives to over-invest in education. In the presence of asymmetric information in the labor market, educational attainment may serve as a signaling device to potential employers about the non otherwise measurable quality of the employee (Spence 1974; Wolpin 1977). This drives a wedge between the actual increase in marginal productivity arising from one additional year of education, and the observed returns in the market. Spence (1974) shows that agents may accrue education even though it may be unproductive. This phenomenon appears supported by the existence of "sheepskin effects" where the year completing a course of education, say high school or college, appears to have a greater contribution to income than the preceding years. This should not be the case in self-employment where the entrepreneur has full information about himself and hence has no

incentive to over-invest in education, or to obtain a specific degree through additional schooling. Given these considerations, the returns to education should be higher in the informal sector, because the self-employed will not have any incentive to over-invest in education. Wolpin (1977) in fact used the self-employed as a control group for estimating screening effects. Broadly in line with the screening literature, and using data for industrialized countries, Fredland and Little (1981), Evans and Leighton (1989), and Borjas and Broners (1989) also find higher returns to education in the self-employed sector.

According to efficiency wage theory, the returns to experience should be higher for salaried workers. Two explanations for suggesting higher returns to experience among salaried workers emerge from the turnover and shirking variants of efficiency wage models. Salop and Salop (1976) argue that in an attempt to reduce turnover in the presence of training or recruitment costs, employers may structure the trajectory of wages over the worker's life cycle such that the worker will have a disincentive to quit prematurely. Moreover, Lazear and Moore (1984) argue that the agency problems attending salaried employment dictate that firms create disincentives to being caught shirking or cheating. By creating an upward slope to the lifetime earnings curve, firms induce workers to work harder. In both cases, self-employment requires no such incentive mechanisms and returns to experience should reflect only gains to human capital and should fall below that observed in firms. Lazear and Moore find an essentially flat curve for the returns to experience in self-employment and the usual upward slope in salaried work.

But arguments from the literature on small firm dynamics suggest that the returns to experience for the self-employed may be larger due to the selection process for survival. It is well-known that small businesses show extremely high rates of mortality. Jovanovic (1982) argues that this results from the fact that entrepreneurs are uncertain about their entrepreneurial ability and hence the firm's true costs of production before entering. More precise estimates of one's entrepreneurial ability can only be learned gradually over time by actually operating the business. Upon entry, some will find realized profits exceeding expected and expand. Others will find themselves running losses and eventually go out of business and return to salaried work. This process will generate higher returns to experience in the self-employment sector as after a while, only successful small businesses remain. Evans and Leighton (1989) find that the self-employed experience higher returns from management and skill training but lower returns from previous wage experience and professional training. (Aronson [1991] also provides a review of numerous studies comparing earnings in the two sectors.)

The data for LAC countries suggest slightly higher mean wages and higher returns to both schooling and experience for the self-employed. As indicated in the first rows of Table 3.3 for the urban areas of six LAC countries, the mean wages of the self-employed tend to be equal or slightly higher than those of salaried workers (except in Chile). As predicted by economic theory, the mean level of schooling is higher for salaried workers (signaling/screening hypothesis). In contrast, self-employed workers tend to have more years of experience. The next rows in Table 3.3 were obtained from Oaxaca-type simulations in which all salaried workers were shifted to the self-employed sector, and all self-employed workers were shifted to the salaried sector (since we are interested in the differentials in returns within sectors, the simulations do not include corrections for self-selection). To interpret the results, consider the example of Argentina.

- Constant: In Argentina, the difference between the earnings regression constants of the self-employed and the salaried (–0.30) implies that for a worker with no schooling at all and no experience, the transition from salaried work to self-employment will result in a 30 percent drop in income. The differences between the constants in the regressions do not depend on the characteristics of the sample. Hence the loss for a shift from salaried work to self-employment (–0.30 in the first column for Argentina) is equal to the gain for a shift from self-employment to salaried work (+0.30 for the second column).
- Years of schooling: Given their distribution of schooling years, the Argentine individuals currently in the salaried sector could expect an increase in their wage of 12 percent on average if they had access to the higher returns to education available in the self-employment sector. The number in the column for the shift from self-employment to salaried work (–0.12) has a similar interpretation, in that this shift would result in a loss of 12 percentage points. (These two numbers are equal, but they need not be.)
- Years of experience: Given their distribution of years of experience, Argentine salaried workers could expect another 12 percent gain in wages if they were able to get returns to experience similar to those enjoyed by the self-employed. Again, the number in the column for the shift from self-employment to salaried work (–0.15) has similar interpretation, but it is based on the distribution of years of experience for the self-employed individuals.
- Total effect: Overall, on average, because of the lower regression constant for the self-employed who lack schooling and experience, salaried workers in Argentina would loose 6 percent of their wages if they had access to the structure of returns enjoyed by self-employed worker. Shifting from self-employment to salaried work would provide a gain of 4 percentage points (Recall that these simulations do not take into account self-selection; this would have to be done using switching regression models. Our interest here is in measuring differences in the returns to individual characteristics and their impact on earnings, not occupational choice.) A similar pattern can be observed for the other countries in Table 3.3, with Chile being an exception in that the constant is higher for the self-employed in that country, which generates a gain when switching from salaried work to self-employment.

Table 3.3: Returns to Schooling and Experience for Salaried versus Self-employed Workers

	Argentina		*Bolivia*		*Chile*		*Colombia*		*Uruguay*		*Venezuela, R.B. de*	
Mean characteristics of individuals in both sectors												
	Salary	S. E.	Salary	S. E.	Salary	S. E.	Salary	S. E.	Salary	S. E.	Salary	S. E.
Mean wage	687	881	708	711	141849	312938	235770	321143	3422	4125	40094	40188
Mean schooling	10.44	10.10	8.83	5.55	9.07	7.44	9.44	7.94	10.01	9.49	8.62	6.92
Mean experience	18.85	24.79	16.68	29.63	19.84	30.28	15.86	25.28	20.41	28.25	17.89	26.70
Sources of differences in earnings when shifting workers from one sector to the other (using the mean characteristics of the individuals in each sector)												
	Salary to S.E.	S. E. to Salary	Salary to S.E.	S. E. to Salary	Salary to S.E.	S. E. to Salary	Salary to S.E.	S. E. to Salary	Salary to S.E.	S. E. to Salary	Salary to S.E.	S. E. to Salary
Constant	–0.30	0.30	–0.73	0.73	0.30	–0.30	–0.54	0.54	–0.35	0.35	–0.31	–0.31
Schooling	0.12	–0.12	0.73	–0.51	0.08	–0.04	0.35	–0.29	0.16	–0.15	0.06	–0.03
Experience	0.12	–0.15	–0.10	0.10	0.12	–0.19	0.10	–0.15	0.06	–0.07	0.10	–0.13
Total	–0.06	0.04	–0.10	0.32	0.50	–0.53	–0.09	0.09	–0.12	0.12	–0.15	0.15

Source: Own estimates.

The above discussion has implications for the relationship between informality and poverty. The main points made in our discussion of informality can be summarized as follows. First, the results in Table 2.5 indicate that when self-employment is taken as a proxy for informality, the informal sector need not be inferior to the formal sector since it tends to provide slightly higher wages on average. Self-employment also provides flexibility. Second, the low constants in the wage earnings regressions for the self-employment sector in Table 3.3 confirm that there is a segment of the informal sector which relies on uneducated and unskilled labor, and does not enable its participants to emerge from poverty. Specific actions can be taken by policy makers to help these workers. Third, the above discussion suggests that even in the absence of labor market distortions, there are good reasons to expect that the returns to human capital will differ in the two sectors. Such differences need not signal a need for public intervention. Fourth, as suggested by the noisy selection model of firm dynamics, while mean earnings may be higher in the self-employment, the earnings variability in that sector is also going to be higher (chapter 2). Public safety nets may therefore be needed to help the self-employed during downturns.

The above discussion has also implications for the analysis of wage discrimination between men and women. While it is likely that there is some degree of discrimination against women in the labor market, the magnitude of that discrimination may be lower than suggested by standard regressions on labor force participation, occupational choices, and wages.

- Labor force participation: In Mexico, Cunningham (1998) shows that 26 percent of women work, versus 80 percent of men. However, if statistics are broken down according to role in the family, single family heads have much more similar participation rates by gender: 70 percent for women and 87 percent for men. In contrast, wives have a labor force participation rate of only 24 percent. In other words, it is one's position and responsibility in the family, rather than labor market opportunities, that seems to determine labor force participation.
- Occupational choice: When working, women participate in often lower paying informal sector jobs, but this need not imply discrimination. Again in Mexico (Cunningham, 1998), single women are 63 percent formal, as compared to 49 percent for single men. Here as well, the position in the family may have more to do with one's occupational choice than gender. The fact that the formal/self-employed wage gap is often higher for women than men is also logical. Men do not go into the informal sector for time flexibility because they work full time. Hence, they should not pay the same flexibility premium as women.
- Wages: In wage regressions, age is typically taken as a proxy for potential experience, because years of actual experience are rarely observed. Hence, while women may have less actual experience than men (due to child bearing and rearing responsibilities), this may not be observed in the data, leading to a downward bias in coefficient estimates for experience for women. In turn, this may be mistakenly associated with discrimination. Put differently, if a man works and accumulates skills while a woman raises children, they bring different levels of human capital that should translate into distinct earnings. It has been shown that controlling for actual versus potential experience erases most of the wage discrimination suggested in the United States. Until such data is available for Latin American countries, one should be careful before suggesting discrimination. This does not imply that nothing should be done to promote better earnings for women. It only implies that for such a goal, labor market interventions aiming at reducing discrimination may not be as fundamental as believed.

In Rural Areas, the Poor Lack Access to Land, Credit, and Other Assets

One of the factors contributing to rural poverty in LAC is the lack of access to land for the poor. In rural areas, land is one of the determinant of per capita income (when measures of auto-production and consumption are adequately taken into account in estimating incomes). Some households are poor because they do not have access to land. Even when there is access, inequality in land holdings is high according to poverty assessments. In Ecuador, the Gini coefficient of the distribution of operated land was as high as 0.80 in 1994, and 1.6 percent of the farms in the Sierra occupied 42.9 percent of the land. In El Salvador, 87 percent of the farmers cultivate basic subsistence crops on holdings of three hectares or less. These farmers account for 25 percent of the total farmed area, while the top 3 percent of farmers in terms of land holdings work 44 percent of the land. With a few exceptions, this pattern is repeated throughout LAC.

Land titling programs and market-based land reforms have the potential to help the rural poor. As noted by Cord, Gacitua-Mario, and Wodon (1999), land titling programs can help the poor. In Honduras, USAID has funded a large land-titling program that took place from 1983 to 1994, a period during which the percentage of farmers with legal land titles increased from 11 to 56 percent (López, 1996). In Paraguay, farmers were also able to obtain legal land titles individually, although because there was no organized widespread program, transaction costs were large and might have reduced incentives for land titling (Carter and Olinto, 1996). The analyses of the impact of land titling in Honduras and Paraguay show that land titling had positive impacts on investment demand, credit supply (collateral effect), and farm household income. The investment effect appears to be larger for land attached investments than for unattached investments. In Honduras, this is reflected by investments in, among others, coffee trees and coffee drying patios. In Paraguay, the investment demand effect was apparent only for farms larger than 20 hectares. In both cases, the collateral effect was larger than the investment effect. The main impact of the collateral effect was to reduce the credit constraints of farmers. Land reform was shown to allow for increasing investments in inputs which enhance productivity and thus increase farm-household income. As a result, farm-household income increased in Honduras by US$100 per year and in Paraguay by US$ 40 per year. These case studies suggest that land titling may increase land productivity and farmer income. In the Dominican Republic, a social and structural policy review prepared by the World Bank suggests that land titling, more than the area of land cultivated, is key for improving living conditions.

The need for land titling is also recognized in World Bank poverty assessments. The Bolivia poverty assessment contains an extensive discussion of the legal and institutional constraints that have historically impeded the resolution of land issues. The assessment then describes six different types of land tenure systems within the country and shows how policies for improving access to land must be tailored to the specific circumstances of each type. The Guatemala assessment also makes recommendations for improving the access of the poor to land: (a) implementing policies that would help reduce the excess of land prices over the discounted value of agricultural profits, thereby decreasing the market value of land and making it more affordable to the poor; (b) incorporating a partial grant element in selling land to the poor; (c) decentralizing the land reform process; and (d) promoting area-based land titling schemes accompanied by a system of decentralized dispute resolution mechanisms. The Brazil

assessment shows how a variety of policies have made tenancy and sharecropping unattractive to owners. The Ecuador assessment also devotes considerable attention to the importance of the rural land market and bases its argument for assisting the poor to acquire land on the empirical finding that small farmers use their land more intensively and have higher yields than large farmers. It notes that targeting financial help to the rural poor might be necessary to enable them to purchase land since they often cannot use their small, poor quality plots as collateral with commercial agricultural banks. The Colombia assessment discusses the market-based land reform program adopted in 1993 and concludes that its reliance on market mechanisms would resolve most supply-side constraints by reducing cumbersome administrative procedures in land transactions and by providing de facto subsidies on distributed land. However, the implementation of that reform has been made difficult by the climate of violence in the country.[5]

Apart from land, the rural poor also lack access to credit. The sources of rural credit can be classified into formal credit, informal credit, and micro-finance. Formal credit is based on collaterals and provided by commercial and agricultural banks. Informal credit is obtained through networks of friends and relatives. Micro-finance consists of generally targeted credit programs provided by NGOs or the Government. Because informal credit is typically not sufficient, good systems of formal or micro-credit are needed,[6] but they are lacking in LAC. This is documented in several poverty assessments. In Nicaragua, the assessment argues that no viable schemes for financial intermediation have been developed for the estimated 250,000 small- and medium-sized farmers. The Bolivia assessment likewise contains an extensive discussion of the poor's lack of access to credit (not limited to rural areas, however). The Colombia assessment views rural credit markets as a serious constraint on the reduction of poverty. Lending to small farmers by private institutions is viewed as unattractive, and the lack of capital has significantly constrained the ability of small rural entrepreneurs to launch new ventures.

The experience in Government programs to target subsidized credit to the rural poor has been mixed in LAC according to poverty assessments. One commonly cited example of success is Banco Sol in Bolivia, which has been lending to micro-enterprises utilizing solidarity group lending techniques originally developed by a non governmental organization in the country. But other experiences have not been as successful. The Bolivia assessment identifies provisions that restrict the poor's access to formal credit, including discrimination, limitations on what the poor can provide as collateral, and insufficient development of credit bureaus. Public credit from the Banco Nacional de Fomento in Ecuador has reached few small farmers according

[5] The above paragraph does not constitute any endorsement of one or another way to implement land reform. See Deininger and Binswanger (1999) for a recent review the World Bank's thinking on land policy.

[6] There is ample evidence at the international level that access to credit helps the rural poor. The classic case study is Bangladesh's Grameen Bank. While the group-based lending system of the Grameen Bank may not reach the poorest (the self-selection process implies that better off households may tend to join into groups without accepting poorer households who represent a larger default risk), it has worked for many families (Khandker and Chowdhury 1996). Pitt and Khandker (1998) estimate that every dollar loaned by the Grameen Bank increases household expenditures by 17 cents. One question that remains unresolved, however, is whether such programs are sustainable. According to Khandker, Khalily, and Khan (1995), the Grameen Bank program is sustainable, but D. Ray (1998) points out that out of every dollar provided, 22 cents are still received as subsidies from foreign donors and the Bank of Bangladesh, and Murdoch (1997) estimates that to cover its costs, Grameen would have to charge interest rates at twice its current rate of 12–17 percent if it were not subsidized by foreign donors and the state.

to the poverty assessment. In Mexico, the impact of Government programs on the rural poor has not been demonstrated to be strong. The Nicaragua assessment refers to a disarray in rural credit. Group lending schemes and the use of nongovernmental organizations as financial intermediaries are viewed as alternatives for increasing the access of the rural poor to credit.

Another potential area of intervention for the rural poor is the promotion of non-farm employment. The non-farm sector has been mentioned as a possible route out of poverty in poverty assessments, such as that of Ecuador. More generally, across many LAC countries, rural households with heads working in industry and services are less likely to be poor than rural households with heads working in agriculture (chapter 4). While encouraging for the non-farm sector, this does not mean that farmers will automatically gain when joining the non-farm sector. Poor farmers may lack the education or other attributes which would allow them to be successful in the non-farm sector. In fact, the early literature on the rural non-farm sector viewed it as a residual and unproductive sector which would vanish over time. The positive role played by the non-farm rural sector has been emphasized only recently (see Lanjouw and Lanjouw [1994] for a survey). Several authors have suggested the existence of synergies between the rural farm and non-farm sectors. In periods of agricultural growth, backward linkages work through the added demand by the farm sector for non-farm products such as plows, tools, and engines used as agricultural inputs. Forward linkages from the farm to the non-farm sector arise out of the necessity for the farm outputs to be processed by non-farm enterprises. And consumption linkages occur when higher income for farm households generate an increased demand for locally produced non-farm products. However, it is not clear whether the growth of the off-farm rural economy is something that can be explicitly promoted by public policies, or is rather the favorable outcome of more generalized advances in the rural economy. Finally, it is not sure whether the potential of the non-farm sector can be reaped by the poorest households.[7]

The provision of basic rural infrastructure is one more area where public policy can make a difference. Unfortunately, as with many other government programs in the region, the benefit incidence of public expenditures on rural infrastructure does not appear to be particularly pro-poor. In Mexico, past social infrastructure programs were not well targeted. But to the credit of the country, the recent poverty assessment highlights the benefits of a new approach taken by the government whereby funds are distributed for social infrastructure projects to municipalities according to their level of poverty as measured by publicly available indicators. More generally, a promising alternative for reaching the poor with basic infrastructure lies in demand-driven rural investment funds that emphasize participation by the beneficiaries, often with the assistance of non-governmental organizations, in identifying, financing, and implementing small projects. While these are not extensively discussed in the assessments, recent work on social investment funds indicates the benefits of community participation in social funds (chapter 5).

[7] There may be a tradeoff between growth and poverty reduction in the promotion of the non-farm sector. Non-farm activities tend to be more developed in the periphery of urban-industrial centers because enterprises are attracted by the local product markets, the availability of a skilled workforce, the variety of production inputs, the possibility of technological spillovers, and better infrastructure. Accordingly, Ravallion and Wodon (forthcoming a) find that the benefits from non-farm employment are largest in the richest areas of Bangladesh. However, Ravallion and Wodon also find that policy makers should invest in the poorest areas if they want to reduce poverty, even though the absolute gains from non-farm employment are larger in richer areas.

Finally, rural cash transfer programs may have multiplier effects. Procampo is Mexico's Program of Direct Payments to the Countryside. It provides cash transfers to farmers since 1994. The program was implemented for a transitional period of 15 years in order to ease the transition to a liberalized economy following the adoption of NAFTA (North Free Trade Agreement). The payment to farmers are determined according to the area of land cultivated, and they are not means-tested. An evaluation of Procampo (Box 3.3) suggests that the program has a multiplier effect, in that one Peso transferred to a farm household appears to generate two Pesos in revenues (Cord and Wodon, 1999). This multiplier could be Keynesian, but it could also be due to the facilitation of investments by farmers. The evaluation of the program recommends further steps to maximize the program's impact, including enabling the beneficiaries to use part of the payment as a collateral, and providing more information ahead of time as to the Procampo grants that will be disbursed so that the farmers can plan (and possibly borrow) ahead of time.

BOX 3.2: IMPACT OF MEXICO'S PROGRAM OF CASH TRANSFERS FOR FARMERS

Mexico's Program of Direct Payments to the Countryside (Procampo) provides a fixed amount of money per hectare of land cultivated by rural farmers since 1994. According to government data, Procampo covers today 90 percent of Mexico's cultivated area. In the fall-winter season of 1997, almost three million agricultural producers received payments totaling 7.5 billion pesos (US$984 million) and covering almost 14 million hectares. A large majority of beneficiaries are small farmers. To analyze the impact of the program on the income of participants, Cord and Wodon (1999) use a panel data set for Mexico's ejido sector, and the estimation technique known as double differencing. Let Y_{ijt} denote the income of household i living in area j at time t. The vector of household level dependant variables, including a constant, is X_{it}. The vector of area-level dependant variables is denoted by Z_{jt}. The participation in Procampo (the amount of the transfer provided by the household) is denoted by PR_{ijt}. This participation is itself a function of the same variables, plus the relative availability of the program at the area level (in comparison with other areas), as denoted by RPR_j, and its square. The model is:

$$Y_{ijt} = \gamma_Y' X_{it} + \delta_Y' Z_{jt} + \alpha PR_{ijt} + \varepsilon_{Yi} + \varepsilon_{Yijt}$$
$$PR_{ij} = \gamma_{PR}' X_{it} + \delta_{PR}' Z_j + \mu_{PR} RPR_j + \chi_{PR} RPR_j^2 + \varepsilon_{PRi} + \varepsilon_{PRijt}$$

Given that the data used is for 1994 and 1997, and the Procampo program did not exist before 1994, PR_{ijt} is zero in 1994 and ΔPR_{ijt} is simply PR_{ijt}. After first differencing, the model is:

$$\Delta Y_{ijt} = \gamma_Y' \Delta X_{it} + \delta_Y' \Delta Z_{jt} + \alpha \Delta PR_{ijt} + \Delta \varepsilon_{Yijt}$$
$$\Delta PR_{ijt} = PR_{ijt} = \gamma_{PR}' X_{it} + \delta_{PR}' Z_j + \mu_{PR} RPR_j + \chi_{PR} RPR_j^2 + \varepsilon_{PRijt}$$

The econometric results suggest that transferring one peso through Procampo creates 2 pesos for the household. There is a multiplier effect at work. Various hypotheses can be suggested to explain this multiplier effect.

- First, Procampo may lead to a net increase in household investment, encouraging producers to purchase more inputs than they otherwise would. The expanded use of (better) inputs could in turn lead to a higher net return from agricultural activities. For example, beneficiaries might purchase more fertilizer than they otherwise would. This explanation is supported by the fact that about 70 percent of program beneficiaries claim to use at least part of their Procampo grant to purchase inputs.
- Second, Procampo may provide a constant stream of income to its beneficiaries. This may encourage riskier and higher yielding investments. It has been shown that given their limited ability to handle risk, poor rural households in Mexico allocate their limited labor, land, and capital in such a way as to avoid risk and income fluctuations. In such a context, the assurance of a basic stream of income may reduce the risk aversion of poor farmers, making them more likely to shift out of maize and beans into higher yielding and riskier asparagus and strawberries.
- Third, there may be a Keynesian multiplier effect at work, whereby the increased Procampo income generates additional local consumption demand, which translates into increased product sales and work opportunities for local households.

CHAPTER IV: OPPORTUNITY (II)
INVESTMENTS IN HUMAN CAPITAL

EDUCATION HELPS IN EMERGING FROM POVERTY

Both statistical comparisons and regression estimates can be used to analyze the relationship between poverty and individual and household characteristics. Statistical comparisons indicate who are the poor, while regressions can shed light on the determinants of poverty. To analyze the marginal contribution of household characteristics to poverty, it has been a standard practice to use categorical regressions such as probits and logits. However, as discussed in Box 4.1, it is better to rely on linear regressions using the logarithm of per capita income as the dependant variable. Also note that while regressions are suggestive of the impact of various determinants of income (and thereby poverty), they may suffer from omitted variables bias. This is likely to be the case in the regressions reported here due to the limited number of independent variables used in the regressions (this limitation is due to the nature of the surveys at our disposal and to the need to use a common set of independent variables available in the surveys for all the countries). Thus one should be careful in interpreting the partial correlations provided as causal links. This being said, this section provides for various household variables:

- An unconditional profile, which gives poverty rates in various groups of households[1].
- A conditional profile, which looks at the marginal impact (in percentage terms) on per capita income of some household characteristics while holding other characteristics constant. If the marginal impact of a variable on per capita income is not statistically significant at the 5 percent level, this is indicated by NS in the tables. Otherwise, the coefficients provide the percentage increase in per capita income associated with the independent variable.

Better educated household members reduce the probability of being poor.

- Unconditional profile: The higher the education of the household head, the lower the probability of being extremely poor. In rural Brazil for example, half of the individuals living in households with a head having less than three years of education are extremely poor, versus only 3 percent for individuals with a head having at least a secondary education.
- Conditional profile: The gains from education remain large after controlling for other characteristics.[2] In most countries, households with a head having completed secondary education have a per capita income fifty percent higher (or more) than households with an illiterate head. The gain from better educated spouses are a bit smaller. The education differential (i.e., the difference between the maximum level of education among all adults in the households and the maximum of the education of the head and the spouse) also has a positive impact. This strong impact of education is observed in both rural and urban areas.

[1] The poverty profile has been estimated with incomes not adjusted for underreporting, but the poverty comparisons would remain with adjustment. That is, while the incidence of poverty would change, the comparisons would not.

[2] The regressions provided for the logarithm of per capita income rely on the following right hand side variables: constant, education of the head by level, education of the spouse by level, difference by level between the maximum education level in the household among individuals aged 15 year or more and the maximum of the education level of the head and the spouse, age of the head and its square, age of the spouse and its square, number of babies (0–5 year old) and its square, number of children (6–14 years old) and its square, number of adults (15 years old or more) and its square, employment/occupation of the head, gender of the head, and absence of a spouse. Only one set of urban and rural regressions are estimated per country, even though the results are presented in different tables.

BOX 4.1. DETERMINANTS OF POVERTY: CATEGORICAL OR LINEAR REGRESSIONS?

It has been a standard practice in World Bank poverty assessments and in other studies to analyze the determinants of poverty through categorical regressions such as probits and logits. In such regressions, it is assumed that the actual (per capita) income of households, which is denoted by the latent variable y^*_i, is not observed. We act as if we only know whether a household is poor or not, which is denoted by the categorical variable y_i, which takes the value one if the household is poor, and zero if the household is not poor. If we denote by X_i the vector of independent variables (including a constant), the model is :

$$y^*_i = \beta' X_i + \varepsilon_i \text{ with } y_i = 1 \text{ if } y^*_i > 0 \text{ and } y_i = 0 \text{ if } y^*_i \leq 0$$

Under the hypothesis of a normal standard distribution for the error term ε_i, this model can be estimated as a probit. The probability for a household with characteristics X_i of being poor is given by $\text{Prob}[y_i^* > 0] = \text{Prob}[\beta X_i + \varepsilon_i > 0] = \text{Prob}[\varepsilon_i > -\beta X_i] = F(\beta' X_i)$ where F denotes the cumulated density of the standard normal distribution. The marginal impact of a change in a continuous variable X_A on the probability for household i of being poor, all other variables being held constant, is $f(\beta' X_i)\beta_A$ where f is the standard normal density. A coefficient β_A positive (negative) implies a positive (negative) effect of an increase in the corresponding variable on the probability of being poor. The marginal probability variations can be measured for any particular value of the X_i vector since $f(\beta' X_i)\beta_A$ depends upon X_i. The convention is to compute the marginal effects at the mean of the sample. Finally note that if the variable X_A is discrete, we can derive its impact on the probability of being poor by comparing the cumulated normal densities for different values of this variable.

The problem with such categorical regressions is that the estimates are sensitive to specification errors. With probits, the parameters will be biased if the underlying distribution is not normal. The alternative is to use the full information available for the dependant variable (indicator of well-being), and to run a regression of the log on the indicator (if its distribution is log normal). Assume that w^*_i is the normalized indicator divided by the poverty line, so that $w^*_i = y^*_i / z$, where z is the poverty line. A unit value for w^*_i signifies that the household has (per capita) income exactly at the level of the poverty line. Then, we can run the following regression:

$$\text{Log } w^*_i = \gamma' X_i + \varepsilon_i$$

From this regression, the probability of being poor can then be estimated as follows:

$$\text{Prob}[\log y^*_i < 0 \mid X_i] = F[-(\gamma' X_i)/\sigma]$$

where σ is the standard deviation of the error terms and, as before, F is the cumulative density of the standard normal. This does not mean that probit/logit regressions should never be used. Categorical regressions will typically have better predictive power for classifying households as poor or non-poor. In other words, if the objective is to provide a tool for predicting poverty (e.g., for targeting using proxy means-testing as discussed in Chapter 5), then the probit/logit results may be valuable. As for the regressions presented in this section, they are provided for indicative purposes only, with no aim at truly replicating the underlying data generation model since we lack information on many household characteristics (there may be omitted variables).

Table 4.1: Impact of Years of Schooling on Extreme Poverty and Per Capita Income, 1995–96

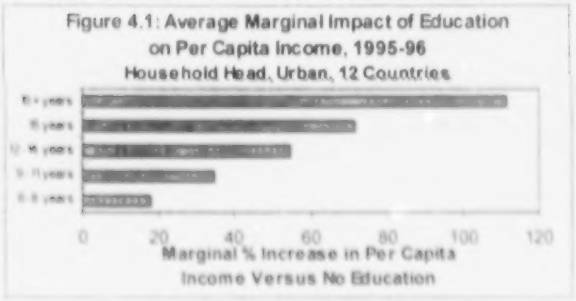
	URBAN											
	Arg.	*Bolivia*	*Brazil*	*Chile*	*Colombia*	*DR*	*Ecuador*	*Hnd.*	*Mexico*	*Paraguay*	*Uruguay*	*Venz., R B. de*
Probability of being extremely poor (unadjusted, unconditional)												
Head 0–2 years	20.80	46.68	25.56	8.23	33.35	16.14	41.88	30.59	37.64	18.18	12.94	63.20
Head 3–5 years	14.67	42.21	13.28	8.65	27.70	9.78	40.32	25.85	31.24	12.50	10.04	57.92
Head 6–8 years	14.73	38.98	12.85	7.25	24.76	5.71	33.47	19.20	22.55	6.62	8.73	48.93
Head 9–11 years	10.77	34.81	8.04	4.31	17.66	3.50	30.45	12.52	15.72	2.95	2.28	35.06
Head 12–14 years	9.62	25.55	4.39	2.36	20.51	3.48	16.20	9.21	9.03	1.17	4.76	21.66
Head 15+ years	10.30	11.94	3.30	0.59	12.02	1.59	10.69	5.18	1.23	0.74	2.16	15.46
Marginal percentage increase in per capita income (conditional)												
Head 6–8 years	NS	14.17	35.58	17.46	20.83	25.31	13.19	16.68	9.07	26.80	16.94	16.10
Head 9–11 years	24.24	28.85	50.76	35.43	35.82	35.25	26.28	34.87	22.10	53.19	38.64	30.61
Head 12–14 years	41.50	36.35	75.74	65.48	60.33	41.52	43.43	56.64	40.73	70.40	73.72	50.15
Head 15 years	60.12	48.07	112.09	62.19	54.71	66.86	61.16	70.10	79.99	92.68	79.75	71.10
Head 16+ years	106.83	83.55	177.78	123.65	121.31	92.90	88.64	106.06	124.45	130.25	95.47	85.90
Spouse 6–8 years.	NS	NS	21.73	NS	11.82	19.91	NS	25.64	17.12	NS	5.72	8.54
Spouse 9–11 years	NS	16.11	29.04	14.37	16.57	29.00	NS	24.97	32.91	NS	14.11	13.82
Spouse 12–14	NS	15.68	42.76	35.89	35.01	42.94	14.23	35.05	57.83	28.64	37.60	32.66
Spouse 15 years	31.71	21.07	62.82	37.37	34.68	53.60	33.11	58.69	91.63	41.96	52.65	56.14
Spouse 16+ years	53.27	45.69	99.40	85.31	79.30	90.00	44.91	97.37	112.96	75.20	66.88	59.73
Educ. Diff. 6–8	10.04	NS	16.66	12.48	10.40	NS	NS	NS	10.11	NS	12.23	8.13
Educ. Diff. 9	19.21	10.74	33.09	21.90	20.72	13.31	14.48	27.49	22.42	26.65	16.14	16.15
Educ. Diff. 10+	35.81	15.90	62.91	40.27	44.52	30.14	27.83	60.45	36.87	60.35	29.66	31.03

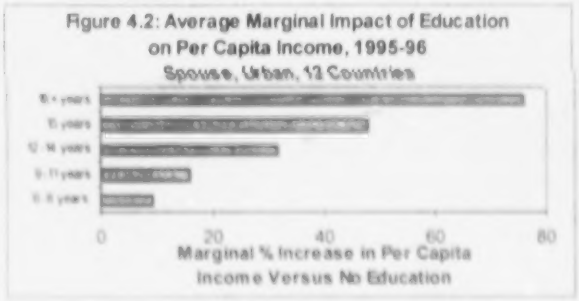
	RURAL								
	Bolivia	*Brazil*	*Chile*	*Colombia*	*DR*	*Honduras*	*Mexico*	*Paraguay*	*Venz., R B. de*
Probability of being extremely poor (unadjusted, unconditional)									
Head 0–2 years	88.70	50.66	14.30	64.27	21.62	60.26	66.23	53.72	78.07
Head 3–5 years	83.84	36.17	14.57	58.53	12.65	51.04	66.65	49.38	76.26
Head 6–8 years	75.89	28.17	17.21	49.88	13.94	41.67	59.07	38.64	71.12
Head 9–11 years	65.03	21.76	10.37	37.25	8.22	17.16	52.19	18.55	59.56
Head 12–14 years	42.69	8.71	4.42	34.12	8.26	10.00	32.00	0.71	19.72
Head 15+ years	42.56	3.08	0.09	13.01	3.07	2.23	1.88	0.67	17.20
Marginal percentage increase in per capita income (conditional)									
Head 6–8 years	32.71	28.16	11.70	11.79	17.77	23.33	NS	19.05	20.30
Head 9–11 years	40.77	44.80	18.80	32.70	21.00	33.24	18.30	25.03	19.95
Head 12–14 years	53.65	61.37	57.17	53.33	40.70	59.87	35.64	44.72	35.95
Head 15 years	61.55	102.83	48.54	37.54	35.49	87.94	69.15	74.39	76.97
Head 16+ years	67.25	181.89	125.40	99.19	64.78	118.35	163.93	114.85	59.24
Spouse 6–8 years.	35.90	21.70	NS	12.25	23.64	16.68	18.40	14.95	21.27
Spouse 9–11 years	54.21	37.67	NS	17.73	29.31	34.19	33.96	19.09	24.95
Spouse 12–14 y.	45.85	45.94	34.97	36.83	38.41	48.83	53.48	45.49	44.55
Spouse 15 years	60.81	73.38	44.41	24.63	35.69	85.82	102.93	77.84	83.10
Spouse 16+ years	88.83	125.84	85.33	88.61	68.70	88.84	58.03	69.93	103.50
Educ. Diff. 6–8	NS	7.46	NS	NS	NS	NS	11.30	NS	NS
Educ. Diff. 9	NS	16.15	6.60	8.27	25.34	21.96	19.73	NS	NS
Educ. Diff. 10+	NS	53.74	16.37	20.83	37.48	49.23	25.71	NS	30.86

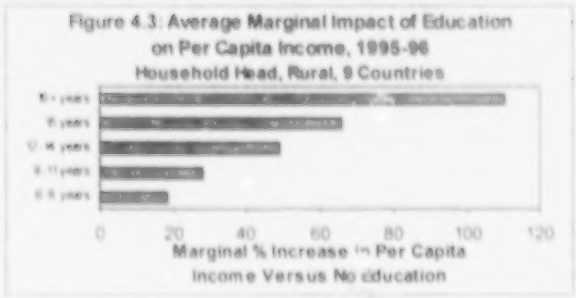
NS is not significant at the 5 percent level.

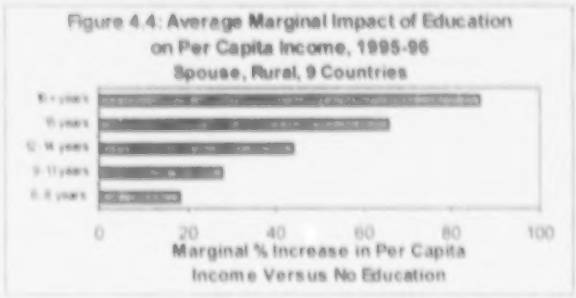
Source: Own estimates. Data for 1995 except Bolivia, Dominican Republic, Honduras, and Mexico (1996).

BEST COPY AVAILABLE









Education also reduces poverty and increases per capita income indirectly through its impact on demographics. It is well-known that better educated women have fewer children, and that larger families tend to be poorer. Thereby, education reduces the probability of being poor indirectly through demographics. Table 4.2 provides a demographic profile of poverty.

- Unconditional profile: Younger individuals have a higher probability of being extremely poor. In urban Argentina for example, a baby has a probability of extreme poverty of 18.97 percent, as compared to 7.19 percent for an elderly individual. Since we use per capita income as the indicator of well being, part of the differences between age groups may be due to our implicit assumption of a lack of economies of scale within households. Hence one should be prudent before making policy recommendations based on this finding. Still, it is highly likely that education does contribute to lower poverty through demographics.
- Conditional profile: The larger the family, the lower the level of per capita consumption, as indicated by the percentage changes in per capita income associated with the number of babies, children, and adults in the household. For example, having one baby in urban Bolivia reduces per capita income by 25 percent, all other things being equal (with the same caveat as to economies of scale). The results in Table 4.2 also suggest that in some countries, there is a non linear relationship between the age of the household head (or spouse) and per capita income, with households having a middle aged or older head (or spouse) faring better than others. This is not too surprising given the existing patterns of life cycle earnings.

Another indirect impact of education on poverty works through the employment opportunities it provides. The regression estimates provided in Tables 4.1 and 4.2 include controls for whether the household head is employed, and when employed, for his/her sector of activity (agriculture, manufacturing, or services). Because part of the positive impact on per capita income and poverty of a good employment for the head is due to the level of education of

the head, it can be argued that education has an indirect positive effect through employment. A profile of poverty by employment type for the household head is provided in Table 4.3.

- Unconditional profile: Poverty rates are higher for households with their head working in agriculture or not working. The fact that households with heads in manufacturing or services fare better than households with heads in agriculture is as expected. It may appear to be surprising that households with non working heads are not always the poorest group. Yet this is due to the fact that households with non working heads are a heterogeneous group. While some non working heads are unemployed and poor (and would be better off with a job), others non working heads study full-time for higher degrees, are retired, or can afford not to work.
- Conditional profile: As observed in the unconditional profile, households with a head in agriculture tend to be poorer than those with a head in manufacturing or services. Moreover, in both the urban and rural sectors, having a head employed does improve the standards of living of the household. Thus, conditioning on (among other variables) the education level of the head leads to a positive impact of employment on per capita income in most countries. (Mexico is an exception, but the survey for that country captures non labor related sources of income not available in the surveys used for the other countries; these non-labor-related sources of income are typically enjoyed by households heads who can afford not to work).

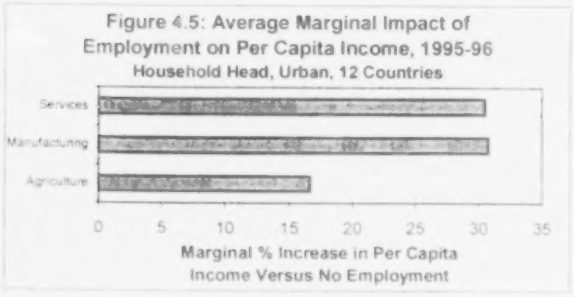


Figure 4.5: Average Marginal Impact of Employment on Per Capita Income, 1995-96
Household Head, Urban, 12 Countries

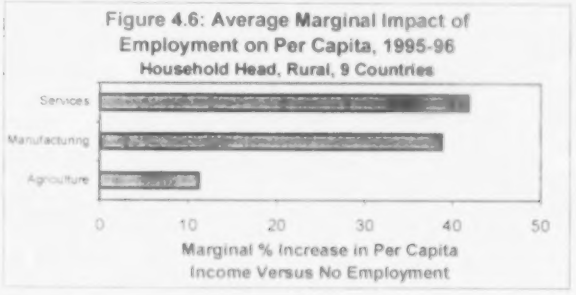


Figure 4.6: Average Marginal Impact of Employment on Per Capita, 1995-96
Household Head, Rural, 9 Countries

Table 4.2: Impact of Demographics on Extreme Poverty and Per Capita Income, 1995–96

	URBAN											
	Arg.	*Bolivia*	*Brazil*	*Chile*	*Colombia*	*DR*	*Ecuador*	*Hnd*	*Mexico*	*Paraguay*	*Urug.*	*Ven., R.B. de*
Probability of being extremely poor (unadjusted, unconditional)												
Baby (0–5 years)	18.97	42.80	24.27	8.22	29.27	9.81	33.36	23.70	26.80	11.15	14.58	55.73
Child (6–14 years)	18.55	42.55	18.93	9.25	30.76	10.37	36.45	26.12	28.02	10.07	13.52	57.11
Youth (15–20 years)	13.54	30.42	12.65	6.44	22.08	6.94	26.38	16.00	19.34	4.90	8.22	46.79
Adult (21–60 years)	11.84	28.07	9.89	4.27	19.87	5.18	22.38	15.44	15.04	5.86	5.36	37.97
Elderly person (60+)	7.19	25.54	4.62	1.88	21.59	7.18	25.19	35.63	15.20	6.39	1.84	41.33
Marginal percentage increase in per capita income (conditional)												
# babies	–42.82	–25.45	–42.78	–32.22	–31.99	–26.79	–24.94	–30.25	–26.69	–34.01	–35.32	–23.69
# babies squared	6.27	NS	3.35	3.42	2.48	NS	1.94	3.38	1.80	3.84	3.67	1.57
# children	–32.31	–27.95	–36.35	–37.85	–35.25	–27.13	–33.27	–28.51	–28.71	–35.17	–35.96	–30.87
# children squared	2.08	2.62	3.08	4.33	4.00	NS	3.76	2.50	2.47	4.36	3.41	2.85
# adults	–22.29	–10.66	–17.90	–24.66	–16.78	–17.47	–14.52	–9.57	–25.33	NS	–30.98	–10.42
# adults squared	1.75	1.22	1.07	2.39	1.48	1.74	1.46	1.29	2.04	1.33	2.97	1.11
Age head	NS	2.98	3.00	2.33	1.33	NS	0.68	1.81	2.44	NS	0.87	1.09
Age head squared	NS	–0.02	–0.02	–0.01	–0.01	NS	0.00	–0.02	–0.02	NS	NS	–0.01
Age spouse	NS	NS	1.11	NS	0.82	1.71	2.73	1.69	2.81	NS	1.21	NS
Age spouse squared	NS	NS	–0.01	NS	–0.01	NS	–0.03	–0.02	–0.02	NS	–0.01	NS
	RURAL											
	Bolivia	*Brazil*	*Chile*	*Colombia*	*DR*	*Honduras*	*Mexico*	*Paraguay*	*Venezuela, R.B. de*			
Probability of being extremely poor (unadjusted, unconditional)												
Baby (0–5 years)	85.52	60.27	22.68	67.16	20.36	59.11	67.86	52.64	84.91			
Child (6–14 years)	85.03	53.73	23.47	67.68	18.54	58.18	71.64	52.33	79.90			
Youth (15–20 years)	81.18	38.74	14.36	53.37	12.94	48.53	60.42	42.88	69.37			
Adult (21–60 years)	78.49	35.50	11.03	52.01	11.39	46.65	56.08	38.95	66.57			
Elderly person (60+)	78.47	8.96	4.27	52.49	14.90	53.98	40.71	34.24	60.92			
Marginal percentage increase in per capita income (conditional)												
# babies	–35.10	–36.78	–34.22	–23.90	–31.10	–29.07	–22.23	–38.31	–32.65			
# babies squared	5.85	2.45	3.87	1.80	NS	3.87	NS	4.29	3.77			
# children	–40.81	–33.66	–37.28	–27.67	NS	NS	–27.59	–24.16	–32.55			
# children squared	6.62	3.22	4.20	2.39	3.43	2.97	2.08	1.80	3.82			
# adults	–32.16	–7.58	–13.94	–7.37	–9.90	NS	–21.95	NS	NS			
# adults squared	4.88	NS	1.55	1.03	NS	NS	1.82	NS	0.78			
Age head	2.45	1.83	1.33	0.74	NS	NS	2.47	NS	2.96			
Age head squared	NS	–0.01	NS	–0.01	NS	–0.01	–0.02	NS	–0.03			
Age spouse	NS	NS	NS	0.51	NS	NS	1.77	NS	NS			
Age spouse squared	NS	0.01	NS	0.00	NS	NS	–0.01	NS	NS			

NS is not significant at the 5 percent level.

Source: Own estimates. Data for 1995 except Bolivia, Dominican Republic, Honduras, and Mexico (1996).

Table 4.3: Impact of Employment on Extreme Poverty and Per Capita Income, 1995–96

	URBAN											
	Arg.	*Bolivia*	*Brazil*	*Chile*	*Colombia*	*DR*	*Ecuador*	*Hnd*	*Mexico*	*Paraguay*	*Urug.*	*Venez., R.B de*
Probability of being extremely poor (unadjusted, unconditional)												
Non working head	21.91	42.14	23.29	9.81	25.88	12.96	32.42	45.55	18.69	14.01	6.97	55.64
Head agriculture	16.27	54.03	30.35	11.65	28.84	14.84	38.26	25.32	45.74	16.37	16.08	65.76
Head manufacturing	6.84	36.16	8.06	3.22	20.67	3.45	27.35	14.81	14.36	3.33	5.68	39.98
Head services	9.97	29.67	8.38	3.54	22.86	5.00	24.97	11.61	18.76	5.80	6.39	40.69
Marginal percentage increase in per capita income (conditional)												
Head agriculture	64.37	NS	9.31	23.89	18.81	15.69	12.33	24.71	-22.23	NS	20.51	32.41
Head manufacturing	47.34	29.05	41.69	38.29	16.29	36.67	17.12	37.37	NS	30.76	28.51	46.18
Head services	45.70	38.27	33.78	36.73	15.13	32.05	18.39	39.37	NS	34.47	30.54	41.68
	RURAL											
	Bolivia	*Brazil*	*Chile*	*Colombia*	*DR*	*Honduras*	*Mexico*	*Paraguay*	*Venezuela, R.B. de*			
Probability of being extremely poor (unadjusted, unconditional)												
Non working head	79.27	34.75	16.88	57.76	25.55	70.99	55.20	41.92	80.86			
Head agriculture	88.70	47.59	14.88	62.66	15.79	55.45	68.56	57.30	78.15			
Head manufacturing	65.03	24.78	10.91	61.30	8.20	41.06	50.35	18.84	57.17			
Head services	46.22	24.07	9.66	47.82	9.24	32.69	51.26	17.02	63.74			
Marginal percentage increase in per capita income (conditional)												
Head agriculture	-29.30	9.08	52.72	NS	23.32	18.17	-14.35	NS	41.75			
Head manufacturing	64.44	53.09	58.08	NS	29.90	33.86	10.24	44.42	55.88			
Head services	83.44	34.11	60.66	12.22	42.07	39.09	NS	58.78	46.54			

NS is not significant at the 5 percent level.

Source: Own estimates. Data for 1995 except Bolivia, Dominican Republic, Honduras, and Mexico (1996).

Individual level labor income regressions suggest that the returns to education are increasing with the years of schooling, and that they have remained stable over time. The main channel through which education increases per capita household income is through labor income (salaried or self-employed) for the household members who are working. Regression estimates (available upon request, see Box 4.2 for the methodology) suggest that older and better educated individuals are more likely to work. Moreover, for women, the presence of babies and children in the household reduces participation in the labor market, while this is not (or less) the case for men. Apart from increasing the probability of working, a better education (and more experience) also increases the expected wage when working. The returns to education computed from the wage equation regression estimates for urban men 25 to 60 years old are given in Table 4.4 for a subset of countries and years. The higher the level of education, the higher the return to each additional year of schooling, which helps in explaining the high levels of wage inequality in LAC. On the other hand, the returns to education have remained fairly stable over time. This may come as a surprise to those arguing that the move towards more open economies together with the progress in technology have led to a premium in the wages paid to the best educated. If this trend is underway, it had not yet made an impact by 1996 in the countries under review according to the above estimates. Still, despite the results reported in Table 4.4, the weight of the evidence in the literature is probably towards some increase in the premium paid to the best educated worker.

BOX 4.2. EDUCATION, LABOR FORCE PARTICIPATION, AND WAGES

There are different ways to look at the impact of education on wages. The returns to education presented in Table 4.4 were obtained using the standard Heckman model which can be used to capture the impact of education on both the probability of working and the expected wage when working. Denote by log w_i the logarithm of the wage observed for individual i in the sample. The wage w_i is non zero only if it is larger than the individual's reservation wage (otherwise, the individual chooses not to work). The difference between the individual's wage and reservation wage is denoted by Δ^*_i. The individual's wage on the market is determined by geographic location (separate regressions are run for the urban and rural sectors), years of experience E, and years of schooling S. There may be other determinants of wages but these are not observed. The difference between the individual's wage and his reservation wage is determined by the same characteristics, plus the number of babies B, children C, and adult family members A of the individual (and their square). The Heckman model is written as:

$$w_i = w^*_i \text{ if } \Delta^*_i > 0, \text{ and } 0 \text{ if } \Delta^*_i < 0$$

$$Log\, w^*_i = \alpha_w + \beta_{w1}E_i + \beta_{w2}E_i^2 + \beta_{w3}S_i + \beta_{w4}S_i^2 + \varepsilon_{wi}$$

$$\Delta^*_i = \alpha_\Delta + \beta_{\Delta1}E_i + \beta_{\Delta2}E_i^2 + \beta_{\Delta3}S_i + \beta_{\Delta4}S_i^2 + \beta_{\Delta5}B_i + \beta_{\Delta6}B_i^2 + \beta_{\Delta7}C_i + \beta_{\Delta8}C_i^2 + \beta_{\Delta9}A_i + \beta_{\Delta10}A_i^2 + \varepsilon_{\Delta i} = m_{\Delta i} + \varepsilon_{\Delta i}$$

The expected value of ε_{wi} is not zero. Denoting by φ and Φ the standard normal density and cumulative density, and noting that σ_Δ, the standard error of $\varepsilon_{\Delta i}$, is normalized to one, we have:

$$E[Log\, w^*_i \mid \Delta^*_i > 0] = \alpha_w + \beta_{w1}E_i + \beta_{w2}E_i^2 + \beta_{w3}S_i + \beta_{w4}S_i^2 + \lambda\varphi(m_{\Delta i})/\Phi(m_{\Delta i})$$

$$E[Log\, w^*_i \mid \Delta^*_i < 0] = \alpha_w + \beta_{w1}E_i + \beta_{w2}E_i^2 + \beta_{w3}S_i + \beta_{w4}S_i^2 - \lambda\varphi(m_{\Delta i})/[1-\Phi(m_{\Delta i})]$$

If λ is statistically different from zero, the returns to education will differ between the employed and the unemployed, although the difference will typically be small. The returns provided in Table 4.4 are computed from the above wage regressions by taking the first derivative of the expected wage with respect to the number of years of schooling. Thus the return to education for year of schooling S is $\partial E[Log\, w^*_i]/\partial S = \beta_{w3} + 2\beta_{w4}S$ when λ is zero. The returns are increasing (decreasing) with the number of years of schooling if the coefficient β_{w4} is positive (negative). These returns do not take into account the positive impact on the probability of working of education (i.e., the fact that $\beta_{\Delta3}S_i + \beta_{\Delta4}S_i^2$ is typically positive). The returns also do not include estimates of the costs of schooling for parents and society (which reduce the returns) and of the indirect effects and externalities associated with education (which typically increase the returns, from the point of view of both the society and the household).

In order to take into account the impact of education on the probability of working, we also computed the product of the expected wage if working times the probability of working as a function of the level of education reached (this was done using a slightly different sample, i.e. including younger individuals as part of an effort to estimate the cost of child labor; see the section on child labor below). The results were used among others to test whether households could expect to emerge from poverty with only one member working, as discussed below.

Table 4.4: Returns to Education for Urban Men 25 to 60 Years Old

	Years of schooling	*Argentina*	*Bolivia*	*Colombia*	*Honduras*	*Paraguay*	*Venezuela, R.B. de*	*Average 6 countries*	*Change vs. 1986*
1986	6	4.3	-0.4	12.8	14.9	10.9	6.4	8.2	
	9	7.8	4.2	14.0	13.1	12.1	8.8	10.0	
	12	11.2	8.7	15.1	11.3	13.2	11.2	11.8	
	15	14.7	13.2	16.2	9.5	14.3	13.7	13.6	
1992	6	5.0	4.0	10.4	9.6	8.1	6.2	7.2	-1.0
	9	7.6	7.6	14.6	11.2	11.0	8.1	10.0	0.0
	12	10.2	11.1	18.8	12.8	13.9	10.1	12.8	1.0
	15	12.8	14.7	23.0	14.4	16.8	12.0	15.6	2.0
1996	6	6.9	4.0	6.3	9.2	9.5	5.1	6.8	-1.3
	9	8.3	7.2	9.6	10.7	10.8	6.7	8.9	-1.1
	12	9.6	10.3	12.8	12.2	12.1	8.2	10.9	-0.9
	15	11.0	13.5	16.1	13.7	13.3	9.7	12.9	-0.7

Source: Own estimates.

While a better education clearly helps in escaping poverty, it is not enough if only one household member is working. Using the results from labor earnings regressions, as explained in Box 4.2, we estimated the projected earnings of a household with only one male working adult, as a function of the education level of that adult and his experience. The higher the education level, the higher the future streams of income. More experience also generates more income. However, it can be shown that over the life cycle, one working adult with primary or even secondary education is not enough to help the household emerge from poverty when a typical increase in family size is taken into account to estimate the poverty line (one needs to multiply the per capita poverty line by the number of persons in the households after a marriage and the birth of children). In other words, the message is that in both urban and rural settings, one salary typically does not enable a household to emerge from poverty unless the education level of the working adult is very high.[3] This is why in some poverty assessments and other studies (Inter-American Development Bank, 1998), there is an emphasis on improving employment and earnings opportunities for women. Indeed, it is only with more than one adult working that many households stand a reasonable chance of escaping poverty (in most households, the second working adult is the spouse).

[3] The inability to escape poverty with only one wage does not imply that measures such as minimum wages are useful and beneficial for the poor. Indeed, minimum wages have not been seen as a appropriate for poverty reduction in World Bank poverty assessments (Ayres, 1999). The assessment of Brazil concludes that policies that affect only formal sector wages, such as an increase in the minimum wage, are not likely to benefit the poor. The assessment for Trinidad and Tobago argues that "it is too much to expect a minimum wage to serve as an effective measure against poverty." It points out that such a wage may render workers with limited endowments of human capital unemployable, and may particularly affect youth, whose productivity is likely to be low, from entering the labor force. The assessment of Chile finds that between 1987 and 1994, increases in minimum wages did not have an impact on the distribution of per capita income. The Colombia assessment concludes that "minimum wage policy has been detrimental to poverty reduction. Protection of unskilled workers in the formal sector has been maintained through the transfer of income from rural to urban groups. The loss from such policies appears to be substantial—almost 1 percent of GDP growth—and, against some beliefs, not conducive to poverty reduction. It may be appropriate for the government to revise its minimum wage policy and allow minimum wages to start declining."

The Cost of Child Labor in Terms of Forgone Future Life-time Earnings is High

According to the International Labor Organization, Latin America is a region with a relatively low incidence of child labor, but some estimates are less optimistic. According to the International Labor Office (quoted by Basu, 1999), at least 250 million children between 5 and 14 years of age are working in developing countries. Of these, half work full-time. Asia has the largest number of working children, but Africa has the largest incidence of child labor. The LAC region, with 9.77 percent of children working in 1995, does better than other regions such as Asia (12.77 percent) or Africa (24.92 percent). However, given that the level of economic development of LAC is higher than that of these other regions, the performance of the region is not as good as it may appear. The fifth installment of the "Sweat and Toil" report of the U.S. Department of Labor (1998) provides information on the incidence of child labor in sixteen countries, including five LAC countries: Brazil, Guatemala, Mexico, Nicaragua, and Peru. The estimates from Government sources range from less than 5 percent (4.1 percent in Guatemala and Peru) to 10 percent or more (9.9 percent in Nicaragua, 12.8 percent in Brazil, and 17.3 percent in Mexico). But the low estimates for Guatemala and Peru are too optimistic:

- In Guatemala, a survey by the ILO and UNICEF estimated that in 1989, 900,000 children between the ages of ten and seventeen were working. The Secretary of Social Welfare of the Confederation of United Unions of Guatemala suggested even higher incidence rates in 1995, with an estimated 1.5–2 million children working (Villareal and Chapetón, 1997). This compares to only 152,000 working children according to the official government estimate.
- In Peru, the official estimate as to the number of working children is 196,000 for the year 1993. But within urban areas, a 1995–96 survey suggest that 4.3 million children between the ages of 6 and 17 are working. This includes 600,000 children between the ages of 6 and 11 (Ministerio de Trabajo y Promoción Social, 1998). The World Bank poverty assessment also suggests a relatively high incidence of child labor.[4]

Poverty assessments confirm that child labor is a problem in many countries. The adjustment of households to poverty may entail an increasing participation of youth and children in the labor force. This creates a set of difficult policy issues. Foremost among them is how to alter the incentive structure for poor children and youth such that remaining in school is seen as a viable option. Child labor is discussed in several poverty assessments:

- In the Brazil poverty assessment, as of 1990, it was estimated that 17 percent of all Brazilian children aged 10–14 were in the labor force. The report documents that premature entry into the labor market increases monotonically as household per capita income declines. While minors typically earn only a fraction of the minimum wage, their earnings often form an important component of the family budget for poor households. In urban areas, 9 percent of all child workers contribute more than 30 percent of their family's total monthly income. The assessment gives special attention to urban street children, noting that certain family attributes (e.g., extreme poverty and the mother as the head) contribute to the problem.
- The assessment of Peru documents an increase in child labor between 1994 and 1997 for children aged 6–14. The rate doubled in this short time span, with 18 percent of children working more than 10 hours per week in 1997. Among the severely poor, about 25 percent

[4] The examples of Guatemala and Peru highlight how the use of different definitions and/or assumptions make it difficult to estimate the magnitude of child labor. The same applies to survey instruments which, typically, are not very good at capturing the extent of domestic child labor, as opposed to paid labor.

of children worked more than 10 hours per week. Despite their increased contributions to household income, children remain one of the poorest groups in Peruvian society. Those younger than 14 years old had a 25 percent higher risk of being poor than the rest of the population.

- Two thirds of the youths interviewed in a pilot study in Argentina participated in the labor market with half of them unemployed. The youth expressed a common view that linked poverty to their limited education. The conflict between work and school eventually leads to their withdrawal from the latter. Since a secondary degree is increasingly necessary to obtain even manual jobs in contemporary Argentina, the early work experiences of poor youths of both genders "place them squarely on the path to their adult jobs in low-paying positions."

The condition of urban working children can be illustrated using surveys for Mexico. In the Mexico assessment, Wodon and Siaens (1999a) review the findings of two recent surveys for that country. The first survey was conducted in 1998 by the government agency DIF (Desarollo Integral de la Familia, 1998) in 100 cities, but not the Federal District. The second survey was carried at two points in time in Mexico City and the Federal District (UNICEF, 1996; Comision para el estudio de los niños callejeros, 1992). Some key findings are as follows:

- Profile of children: A majority of the urban working children are boys (70 percent), although this may be due to the fact that domestic work by girls is not reported. One "working" child out of ten is below 5 years of age. This happens when young children accompany their parents to work due to the lack or cost of child care. The share of working children from the indigenous population is in line with their national population share.
- Workload and activities: In the DIF survey, children and teenagers work on average seven hours a day, five days a week. The mean wage is 46.6 pesos per day (US$5). This corresponds to one and a half times the minimum wage (which is very low in Mexico and not representative of wages earned in urban areas). In 87 percent of the cases, children give their earnings to their family in full or in part. The contribution of the wages earned by the children to the family resources is thus important. The children work in a range of activities such as selling newspapers, washing or keeping cars, cleaning shoes, and entertaining drivers at crossroads. While it is true that some parents use their young children for begging, this is marginal. In the Federal district, six working children out of ten work during the week, three work during the week-end, and one works during the night.
- Housing: The majority of working children live with their family. In the DIF survey, only 8 percent of the children live by themselves ("street children"). In the Federal District, 14.6 percent of the children are considered as living in the street. The share of working children living by themselves is however growing in the larger cities, and it warrants special attention. For the other children, the main reason to work (in 62 percent of the cases) is to help their family. The study confirms that working children come from the poorest social classes. Among working children, the share of single parents families is three times the national average. Still, 37 percent of the children declare working because they like the work more than being in school. Only one child of 100 declares having been forced to work. In most cases, the children are well treated at home. Bad treatment is more frequent among street children, which may explain in part why those children have left their family.
- Schooling: In the DIF survey, two thirds of working children in urban areas combine work and schooling, and 40 percent use part of their earnings to buy school furniture. Hence there is only partial substitution between child labor and schooling. In the Federal District as well,

only one third of the children working declare having left their school, often because what they learned in the school did not interest them. The school system does not apparently respond to the needs of these children who end up preferring small jobs that give them confidence and autonomy. The reputation of institutions providing assistance is bad among working children. Few children visit these institutions, and some complain about the treatment they received there. This again reflects the necessity to change existing structures to better meet the specific needs of working children, especially those living by themselves.

- Origin and delinquency: It is sometimes argued that working children are migrants from less developed areas. Here again the findings of the DIF study contradict the conventional wisdom since four out of five children work in their city of origin. The impact of migration is larger in the Northern cities where living standards and job opportunities attract rural farmers from the South. The perception that working children are delinquents in conflict with authorities is also exaggerated. Only 13 percent of the children have been confronted with the police. This is mainly the case for "street children." Some of these children complain about corruption and bad treatments from the police.
- Risks: It remains true of course that working children face multiple risks, including bad treatments at work, traffic accidents, work accidents, drug consumption, sexual abuses, and illnesses such as AIDS for the small minority of the children engaged in prostitution. Furthermore, the future of some of the children working today is endangered when they are not in a capacity of attending primary or secondary schools. Nevertheless, the catastrophic vision provided at times by the media does not correspond to the reality. What remains more prevalent, and highly problematic in terms of reducing the future opportunities of working children, is the substitution between child labor and schooling.
- Trends: The number of working children in Mexico City may have increased by 20 percent between 1992 and 1995 according to the surveys. Working children also tend to be younger in 1995. The proportion of children living by themselves in the street has increased.

The proportion of working children tends to be higher in rural areas, and in some cases rural children are subject to very difficult working conditions. This can again be illustrated using the example of Mexico. In rural Mexico, the proportion of working children is higher than in urban areas. The phenomenon is particularly visible among migrant agricultural day workers. There are 5 million such workers who offer their services to whomever may hire them, of whom up to 30 percent may be children (Sanchez Muñohierro, 1996). Those working children usually follow their parents in their search for work. Several case studies provide information on child labor in rural areas (Brizzio de la Hoz, 1996). Some children work in foreign-owned modern agricultural enterprises (horticulture, flowers, cotton, etc), which are export oriented and have a high demand for labor. In the valley of Sinaloa for instance, one third of the workers in horticulture could be minors. The legal interdiction for child labor is not respected by employers because controls are rare. Employers provide only verbal work contracts to minors so that it is more difficult to prosecute them. Out of necessity, the children's parents themselves look for work for their children, and they often accept a job only provided that their children are hired as well. Working children often receive the same salary as adults. As a result, they are expected to perform the same tasks as adults, which imposes a lot of pressure on them to increase their productivity. The children work for up to eight or nine hours a day, six days a week, in fairly difficult conditions. It has been estimated that 70 percent of those children do not attend school

any more. Illiteracy rates are high among them. Hence, while the condition of urban street children is frequently studied, the condition of rural migrant children may be harder.

One problem associated with child labor is that it may reduce schooling, and thereby affect the future earnings of today's children. Apart from the concern with extreme forms of child labor, a key impact of child labor (as already mentioned) relates to the possibility of substitution between work and schooling. Schooling tends to compete for a child's time with labor and leisure. Because of the possibility for a child or his parents to reduce the time devoted to leisure, and because schooling does not take all of a child's time, there need not be perfect substitution between child labor and schooling. Nevertheless, there may be partial substitution. (And even in the case where there is no substitution, it may still be that working children will be more tired, and thereby learn or study less). Simple models can be used to analyze the determinants of child labor and schooling, the substitution between the two, the returns to schooling, and the resulting cost of child labor in terms of forgone future earnings (Box 4.3). This is done for Republica Bolivariana de Venezuela, Colombia, Paraguay, Bolivia, Mexico, and the Dominican Republic.

According to regressions for six LAC countries, the demographic characteristics of a household affect the probabilities for children of going to school and working. The presence of babies reduces the probability of going to school for older siblings and increases the probability of working (Wodon and Siaens, 2000). The effect of having several older children in the household is reversed: a larger number of children is associated with a higher probability of going to school and (in a few cases) with a lower probability of going to work. Both effects may be due to the fact that some children have to stay at home to care for the babies, while others may need to work to bring extra resources due to a larger family size. The more babies, the more work to be done at home or outside the home, and therefore the lower the probability of going to school. On the other hand, the more children, the more some of them can go to school while the others stay at home or work. As for the adults, a higher number of them increases the probability of going to school, and reduces the probability of working. When there are only one or two adults in the households, the children work more, and hence attend school less. The age of the head and the spouse, the fact that a household has a female head, and the fact that the head may not have a spouse also have some impact on child labor and schooling.

Higher education levels among adults reduce the probability of child labor and increase the probability of going to school. The education of parents and other adults can affect children directly and indirectly. The direct effect stems from the fact that better educated parents value the education of their children more. Or even if they do not, better educated parents can at least help their children to succeed and thereby remain in school. The indirect effect comes from the correlation between education and income: better educated parents get better paid and do not need to send their children to work as much. In this work, we have included the income of the household head and its employment in the regressions. Therefore we measure direct effects on child labor and schooling of the education of parents and other adults. The impact of the education variables is strong, and would be even stronger if the indirect effects of parental education were taken into account. In many cases, the impact of the education of the parents and other adults is larger for schooling than for child labor. The impacts tend to be larger in urban than in rural areas, which suggests that the decision making process within rural households is constrained, either due to the lack of good education infrastructure, or to the lack of flexibility for labor, as would be the case for seasonal agricultural work.

Box 4.3. Estimating the Cost of Child Labor in Terms of Future Earnings

To estimate the cost of child labor, we proceed in two steps (Wodon and Siaens, 2000). First, we analyze the determinants of child labor and schooling using bivariate probits models for urban boys, urban girls, rural boys, and rural girls. Using bivariate probits generates efficiency gains in the estimation because the correlation between the error terms of the work and schooling regressions is taken into account. It also enables us to compute the probability of going to school conditional on working or not. Denoting by S^* and L^* the latent and unobserved continuous schooling and work variables, by S and L their categorical observed counterparts, and by X the vector of independent exogenous variables, the bivariate probit model can be expressed as:

$$S^* = \beta_S' X + \varepsilon_S \qquad S = 1 \text{ if } S^* > 0,\ S = 0 \text{ otherwise}$$

$$L^* = \beta_L' X + \varepsilon_L \qquad L = 1 \text{ if } L^* > 0,\ L = 0 \text{ otherwise}$$

$$E[\varepsilon_S] = E[\varepsilon_L] = 0 \qquad Var[\varepsilon_S] = Var[\varepsilon_L] = 1 \qquad Cov[\varepsilon_S, \varepsilon_L] = \rho$$

The error terms have a bivariate normal distribution. The impact of child labor on schooling can be computed as the difference in the two conditional probabilities of schooling:

$$\Delta P = P(S=1 \mid L=0, X) - P(S=1 \mid L=1, X)$$

The second step consists in estimating the loss in future income when a child leaves school prematurely. For this, we need to know the probability for a child to work after reaching adulthood, as well as the expected wage when working. The standard model in this category is Heckman's sample selection model described in Box 4.2. After estimating this model (again for the various samples: urban boys, urban girls, rural boys, and rural girls), we compute the future stream of income of the child with two levels of education: six years of schooling (primary level) and nine years of schooling (lower secondary level). In the first case, the child goes to school up to its 12th birthday, while in the second case, he/she stays in school up to the 15th birthday. We then make the simplifying assumption that if there is substitution between child work and schooling, the child who is working leaves the school after six years of schooling (at age 12), while he could have benefited from nine years of schooling otherwise (until age 15). Algebraically, if EW_{6t} and EW_{9t} denote the expected labor earnings (taking into account both the probability of working and the expected wage when working) of the child at age t if he/she has completed respectively six and nine years of schooling, and r is the discount rate (assumed to be 5 percent per year), then the loss ΔEW in lifetime future income for a child not completing nine years of education due to work is:

$$\Delta EW = \sum_{t=16}^{65} \frac{EW_{9t}}{(1+r)^{t-13}} - \sum_{t=13}^{65} \frac{EW_{6t}}{(1+r)^{t-13}}$$

Multiplying the discounted loss in future earnings ΔEW by the substitution effect between child labor and schooling ΔP, and dividing by the child's lifetime earnings if he/she were to remain in school until age 15, provides the percentage cost PC of child labor in terms of forgone income:

$$PC = \Delta P * \Delta EW / \sum_{t=16}^{65} \frac{EW_{9t}}{(1+r)^{t-13}}$$

This computation rests on a number of assumptions (e.g., it assumes zero costs for schooling itself). Nevertheless, it provides a baseline estimate of the income loss due to child labor.

While it is natural to assume that a lack of income for the parents is one of the main factors affecting child labor, the empirical evidence in the literature is mixed. The impact of adult wages on child labor has been discussed among others by Basu and Van (1998) who note that if wages are low, parents may have to send their children to work in order to survive, and this often happens to the detriment of schooling. If wages are high, then parents may not have to send their children to work anymore. According to Basu and Van's Substitution axiom, adult and child labor are substitutes. Moreover, according to their Luxury axiom, children will be sent by their parents to work only if the household income from non-child labor is very low. Basu and Van then explain that there may be multiple equilibria in the labor market, and that in some cases, international policies to abolish child labor may have some unexpected and undesirable effects. In testing Basu's theory, R. Ray (1998) finds that higher wages for adults reduce the probability that children will be working in Peru, but not in Pakistan. Psacharopoulos (1997) finds that the impact of household income on schooling and child labor is significant in Republica Bolivariana de Venezuela, but less so in Bolivia. In Peru, Patrinos and Psacharopoulos (1997) find an impact of family income on a measure of age-grade distortion for children, but no impact on child labor. Siaens and Wodon (1999) find a weak effect of income on child labor and schooling in Mexico.

In our empirical work as well, the income of the head tends to have little impact on schooling and work, and certainly less impact than the occupation of the head. In the regressions presented by Wodon and Siaens (2000), in only a minority of cases does the income of the head have a significant impact on schooling (in three cases out of twelve) and work (in only one case, for urban girls in Paraguay but with the unexpected sign).[5] More than income, it is the occupation of the head that has an impact on both work and schooling. Although there are exceptions, some of the largest differences are observed between the children of heads working in the agricultural sector and those working in the manufacturing sector, with the children with heads in agriculture working more and going less to school. There is no clear-cut effect one way or the other for head working in the more heterogeneous service sector, as compared to the reference category excluded from the regression which corresponds to non-working heads.

There is a high degree of substitution between (paid) child labor and schooling. As explained in Box 4.3, the results of the bivariate probit regressions can be used to simulate the expected probability of going to school when a child is working or not. These probabilities are given for the various samples and countries in Table 4.5. The probabilities of going to school when working vary from 0.13 for rural girls in Republica Bolivariana de Venezuela to 0.74 for urban boys in Bolivia. The probabilities of going to school when the child is not working are systematically higher, and they vary from 0.64 for rural girls in Bolivia to 0.97 for urban boys and girls in the same country. The difference in the probabilities of going to school when the child is not working, and when the child is working, provides an estimate of the substitution effect between work and schooling. These estimates vary from 0.21 for rural boys in Paraguay to 0.67 for rural girls in Republica Bolivariana de Venezuela. These estimates suggest that while substitution is not perfect (child labor can take place after schooling, or the parents can reduce the time allocated to leisure when children work; see Box 4.4 for a simple formal model suggestive of these issues), it remains relatively high.

[5] The income of the head is exogenous, but the income of the spouse is not because of the possibility of substituting household tasks with the children. This is why only the income of the head is included in the regressions.

Table 4.5: Substitution Between Child Labor and Schooling and Cost of Child Labor, 1995–96

	Urban boys	*Urban girls*	*Rural boys*	*Rural girls*	*Urban boys*	*Urban girls*	*Rural boys*	*Rural girls*
	Bolivia				Colombia			
Probability school if work	0.74	0.65	0.32	0.19	0.43	0.42	0.32	0.34
Probability school if no work	0.97	0.97	0.77	0.64	0.94	0.93	0.82	0.80
Difference in probability (1)	0.24	0.32	0.45	0.45	0.50	0.51	0.50	0.46
Difference in income (2)	2.31%	6.26%	18.69%	34.99%	8.27%	8.28%	5.30%	38.04%
Cost of child labor (1)*(2)	1.67%	1.99%	19.40%	15.75%	4.17%	4.19%	2.64%	17.57%
Cost in poverty years	0.27	0.33	2.43	1.97	2.81	1.93	1.42	2.34
	Dominican Republic				Mexico			
Probability school if work	0.78	0.75	0.61	0.04	0.58	0.50	0.29	0.33
Probability school if no work	0.96	0.97	0.95	0.95	0.91	0.84	0.90	0.66
Difference in probability (1)	0.18	0.21	0.34	0.83	0.34	0.35	0.62	0.33
Difference in income (2)	8.21%	22.30%	7.78%	37.59%	12.74%	34.63%	17.57%	54.02%
Cost of child labor (1)*(2)	1.47%	4.78%	2.66%	31.09%	4.27%	12.04%	10.84%	17.65%
Cost in poverty years	1.86	1.95	3.00	5.57	3.85	8.41	6.83	1.61
	Paraguay				Venezuela, R.B. de			
Probability school if work	0.73	0.45	0.55	0.33	0.46	0.40	0.26	0.13
Probability school if no work	0.92	0.88	0.76	0.67	0.91	0.93	0.83	0.80
Difference in probability (1)	0.19	0.43	0.21	0.34	0.45	0.53	0.57	0.67
Difference in income (2)	17.50%	15.33%	20.80%	20.78%	8.39%	13.93%	9.89%	20.23%
Cost of child labor (1)*(2)	3.24%	6.61%	4.45%	7.01%	3.81%	7.40%	5.65%	13.64%
Cost in poverty years	4.86	6.98	3.59	8.55	2.15	2.89	2.52	4.79

Source: Own estimates.

In part as a result of the substitution effect between child labor and schooling, the cost of child labor in terms of a lower future stream of earnings for the children is high. The next step in estimating the cost of child labor is to predict future earnings according to various levels of education. The assumption is that if a child is working, and if this does not enable him to go to school, the child completes only the primary level of education (six years of schooling, up to age 12). In contrast, if the child is not working, and if this enables him to go to school, the child completes the lower secondary level (nine years of schooling). Thus, in the first three years after the completion of primary school, a working child enjoys a benefit because he receives a wage. But for the rest of the child's life, the earnings are lower because of the lower level of education achieved. Computing the net actualized value (with a 5 percent discount rate) of the difference in the future streams of income with primary and with lower secondary schooling provides the "difference in income" figures in Table 4.6. These represent the net monetary loss due to the lower level of education achieved for working children as a percentage of the lifetime income that the children could have expected had they remained in school. The figures are based on the expected probabilities of working and the expected wage when working obtained through Heckman regressions. Taking the difference between the two levels of schooling, dividing this difference by the expected lifetime earnings when children receive nine years of schooling, and multiplying the result by the substitution effect between child labor and schooling gives the estimate of the cost of child labor in terms of foregone lifetime earnings. This difference is large, reaching on average 8 percent of lifetime earnings. It is larger for girls essentially because of the larger impact of a better education on the probability of working. An alternative measure of the cost of child labor is to divide the variable ΔEW in Box 4.3 by the yearly poverty line in order to get an estimate of the number of equivalent additional years out of poverty that a child

could hope for if he/she was not working. Table 4.5 indicates that this cost varies from 0.3 to 8.6 "poverty years."

To discourage child labor and promote schooling, Governments fund programs that reduce the cost of schooling by providing benefits in cash or in kind to children or parents. School-based transfers in cash or in kind reduce the opportunity costs for poor parents of keeping their children in school. This opportunity cost is essentially the loss in child wages or in the value for the parents of the domestic work done by the children which cannot be done when the children go to school, plus the cost of supplies, transportation, etc.[6] In many cases, this opportunity cost of schooling is difficult to estimate, and it is not obvious that the grants must be equal to the opportunity cost for the parents to send their children to school (Ravallion and Wodon, forthcoming a). Indeed, it is reasonable to think that the parents have an intrinsic interest in having their children go to school, either for altruistic motives, or for the future benefits that intergenerational transfers provide once the children reach adulthood. In some countries, the level of the conditional grants appears to be high. For Progresa in Mexico—a program that provides a coordinated intervention for education, health, and nutrition with the hope that the impact of the whole program will be larger than that of its individual parts, see Progresa (1999)—it has been argued to justify the relatively high level of the educational grants that apart from providing incentives to accumulate human capital, they also improve the families' overall quality of life. Yet there may be more cost effective ways to improve the quality of life of the program's beneficiaries. That is, more work would be needed to measure the implicit trade-offs[7].

Several methods can be used for assessing the impact of such programs. Unfortunately, programs such as those used to increase schooling and reduce child labor are seldom evaluated. Subbarao et al. (1997) report that out of 97 social programs surveyed in Latin America, including many school feeding programs, only ten had been evaluated. When evaluations are conducted, they tend to focus on participation, coverage, and targeting without going into the more difficult task of assessing program impacts (Grosh, 1994). And when attempts are made to assess program impacts, this is often done without due consideration to bias which may result from the endogeneity of program placement. The lack of good evaluation is all the more damaging as the funds invested are large, and methods are available for evaluation purposes (see Baker, 2000, for an introductory manual). A first method is based on the random selection of program participants and nonparticipants, and on the analysis of observed differences in outcomes between participants and nonparticipants. A second method is based on the availability of panel

[6] The price of schooling is indeed affected by many variables apart from the opportunity cost of child labor. This includes the presence of a local school (Rozenzweig, 1982), the distance or the time needed to go to the nearest school (Grootaert, 1998), the local mean out-of-pocket expenditures on schooling (Cartwright, 1998), and the existence of Government programs (Ravallion and Wodon, forthcoming b.)

[7] At what level of schooling should the grants be provided? This depends on the characteristics of the country. In Brazil and Argentina, the programs focus on secondary school, since these are the children that are more likely to be pulled out of school during a crisis. In Honduras, the program focuses on the first four years of primary school. In Mexico, the program covers the end of primary schooling, and the lower secondary school cycle. In Republica Bolivariana de Venezuela, the program covers primary school children. In some cases, these programs are tied not only to attendance, but also to school performance, including passing on to the next grade. While this may provide valuable incentives, one has to make sure that such conditions do not exclude the poorest which may have more difficulties in succeeding at school.

data so that outcomes before and after program implementation can be observed. In the absence of randomized experiments or panel data, researchers have relied on matching procedures. A last alternative is to find an instrumental variable that affects program participation, but not outcome conditional on program participation. In their evaluation of two Mexican programs for increasing schooling and reducing child labor, Wodon and Siaens (1999a) use two different surveys and rely on both matching methods and instrumental variables techniques to assess the impact on child labor and schooling of two Mexican programs. The matching is conducted on the propensity score of households without the need to match the treatment and control groups on a characteristic by characteristic basis (Rosenbaum and Rubin, 1983, 1985, see Box 4.4 for more details). In the case of instrumental variables, the analysis follows Ravallion and Wodon (forthcoming b) in using decentralization to identify the system of participation and outcome equations.

An analysis of two Mexican programs aiming at reducing the cost of child labor suggests that the programs are moderately successful. The first program consists of school breakfasts provided in primary schools by the Government agency DIF (Desarolo Integral de la Familia). The number of breakfasts provided daily has increased between 1995 and 1998, from 1.9 million to 4.4 million. The federal government takes in charge 63 percent of the cost of the program, the rest is paid by states and municipalities. The second program consists of cash grants given to children in the last three years of primary school by SEDESOL, the Mexican Ministry of Social Development (the program is known as Niños de Solidaridad). Between 1995 and 1997, 857,000 children benefited from the program. In their evaluation, Wodon and Siaens (1999a) find some results, with the school breakfast program achieving more impact. Yet the results are not overwhelming. The impact on child labor is low, which is not surprising since the program is designed for increasing school enrollment, as opposed to reducing child labor. (The parents may increase schooling at the detriment of the child's leisure, without reducing child labor). This shows the limits of general purpose programs for reducing child labor.

BOX 4.4. MODELING THE IMPACT OF STIPENDS ON CHILD LABOR AND SCHOOLING

Ravallion and Wodon (forthcoming b) provide a simple model for the impact of stipends on child labor and schooling. Consider parents who maximize a utility function depending on the consumption of the household (C), the schooling of the child (S), and the leisure of their child (H). The parents value schooling either to ensure a better future for the child or to benefit from intergenerational transfers once the child reaches adulthood. The total time T of the child is split between schooling, leisure, and work (L), with $S + H + L = T$. The child labor wage is w, so that the child's work provides resources for the household equal to wL. The value for the parents of the stipend b is proportional to the time spent in school, with a contribution to family resources of bS. The other income sources of the parents are denoted by Y. The optimization problem is:

$$Max\ U = U(C, S, H)\ \ s.t.\ C + (w\text{-}b)S + wH = wT + Y$$

The Marshallian demand functions for the child's schooling and leisure can be denoted by $S = S(w\text{–}b, w, wT + Y)$ and $H = H(w, w\text{–}b, wT + Y)$. The supply of child labor is obtained as a residual using $L = T\text{–}S\text{–}H$. The Hicksian (utility-compensated) demand functions minimizing expenditures for a given level of utility U are denoted by $S = S^*(w\text{–}b, w, U)$ and $H = H^*(w, w\text{–}b, U)$. When the government increases the value of its program, the impact on schooling is positive since the own price derivative is negative. In other words, we must have $\partial S/\partial b > 0$. However, the impact on child labor is uncertain. To see this, the Slutsky decomposition of the effect on child labor of an increase in the value of the government program can be used:

$$\frac{\partial L}{\partial b} = \frac{\partial S^*}{\partial (w-b)} + \frac{\partial H^*}{\partial (w-b)} - S\frac{\partial (H+S)}{\partial (wT+Y)}$$

The first term on the right hand side of the last equation is negative if the utility function is quasi-concave in its arguments. The third term is negative if schooling and leisure are normal goods. But the sign of the second term is ambiguous. If schooling and leisure are (utility-compensated) substitutes, it may well be that the increase in schooling obtained by the higher value of the government program will lead to a decrease in leisure, while leaving child labor unaffected. Therefore, the impact of the government programs on child labor is in theory uncertain. This impact must be analyzed empirically.

Different econometric methods can be used to estimate the impact of household participation in the program. Only the method based on matching is explained here (see for example Jalan and Ravallion, 1998, and Wodon and Siaens, 1999a). Each household participating in the program is characterized by a vector of variables X. Ideally, we might want to match each participant with a non-participant having the same characteristics. But this is not feasible if X is large. Fortunately the matching can be made on the probability of participating only (Rosenbaum and Rubin, 1983, 1985). Instead of matching on X, one can construct the control group on the basis of the conditional program participation probabilities Prob (P=1 | X) where P stands for program participation. For each household in the sample, we first compute Prob (P=1 | X) using a standard logit model. Then, for each participating household, we find a non-participating household whose probability of participating is closest to that of the participating household, where closeness is measured by the distance between the two probabilities. Doing this for all participants generates the control group. Then, the incidence of school enrollment and child labor can be compared in the treatment and control groups, and in principle attributed to the impact of the program.

CHAPTER V: SECURITY

The Poor Tend to Get Hurt During Economic Crises by Cuts in Targeted Spending

Macroeconomic shocks have plagued Latin American countries since the 1980s, with serious consequences for the poor not only in the short run, but also in the long run. The impact of macroeconomic shocks on the poor has been documented (e.g., Glewwe and Hall, 1998; Lustig, 1995, 1999; Ganuza, Taylor, and Morely, 1998). Economic crises are covariant shocks that affect real incomes through a reduction in both real wages (via inflation) and hours worked (via unemployment or underemployment). Beyond income effects, which typically vanish within a few years, crises can have longer-term consequences. Reductions in the quantity and quality of public health care due to budgetary pressures may induce irreparable damage. When coping with a crisis, parents may send their children to work. If this induces substitution with schooling, the children may incur long-term economic losses. Safety nets are needed to protect the poor from macroeconomic shocks. They also have a role in normal times, when the poor can be affected by idiosyncratic as opposed to covariant shocks (Holzmann and Jorgensen, 1999).

Governments and international organizations have implemented a wide array of safety net programs to protect the poor from economic shocks. Temporary public works program providing earnings at or below minimum wages (to ensure self-selection) have been expanded to reduce unemployment during crises and other periods of high unemployment or underemployment. In Argentina, this has done in urban areas through the Trabajar program (Ravallion, 1999). In rural Mexico, the Empleo Temporal program has worked as a buffer against off-season rural unemployment. Another Mexican program providing some protection to the urban unemployed is Probecat, whereby participants receive training and minimum wage pay for a few months (Wodon and Minowa, 1999). Beyond workfare, many other programs have been implemented. This includes food subsidies, food stamps, and food baskets distributed to vulnerable groups such as households with babies, pregnant women, and elderly members. It also includes unemployment insurance and severance payments, emergency social funds, etc. However, while these and other targeted programs can provide some relief, it remains to be seen if the overall level of targeted spending per poor person is protected during crises.

The experience during the recent "tequila" crisis of 1995 illustrates how the poor can suffer from large cuts in targeted public spending per poor person during a recession. Consider the data presented in Table 5.1 for Argentina, from Wodon, Hicks, Ryan, and Gonzalez (2000). The country suffered an adverse shock in 1995 the aftermath of Mexico's devaluation. Per capita GDP decreased by 5.32 percent between 1994 and 1995. The share of GDP devoted to targeted social spending decreased a bit, and the poverty rate increased, leading to an increase in the total number of poor people. The targeted spending per poor person decreased much more than per capita GDP, yielding an elasticity to growth (in this case to a recession) of targeted spending per poor person of about five. During this recession, spending for the poor was highly pro-cyclical, while ideally it should have been counter-cyclical in order to protect the poor from the adverse macroeconomic shock.

Table 5.1: Targeted Public Spending per Poor Person, 1994-1996, Argentina

	Real per capita GDP (1994 = 100)	*Share of targeted social spending in GDP (%)*	*Poverty rate (%)*	*Number of poor people (million)*	*Targeted spending per poor person (1994 = 100)*
1994	100	1.24	21.6	7.5	100
1995	94.68	1.21	27.2	9.6	63.12
% change	-5.32%				-27.88%

Source: Own estimates (the poverty rates are based on World Bank poverty assessments rather than this study).

It is difficult to protect the poor during recessions because several forces combine to put downward pressure on the amount of public transfers per poor person. First, as noted by critics of structural adjustment mechanisms, the share of GDP devoted to public spending tends to decrease in order for fiscal restraint to restore macroeconomic fundamentals. Second, GDP itself is by definition reduced during a crisis, so that even if the share of GDP devoted to public spending remains constant, there will still be less resources available for the poor. These two factors tend to make aggregate targeted public spending for the poor pro-cyclical rather than counter-cyclical. Third, poverty increases during a crisis, so that the available aggregate resources targeted to the poor have to be distributed among a larger pool of applicants, yielding lower spending per poor person. This reasoning is fomalized in Box 5.1.

On average, a one percent decrease in per capita GDP leads to an estimated two percent decrease in targeted public spending per poor person. Using the decomposition presented in Box 5.1, Table 5.2 shows that on average, during recessions, a 1 percentage point decrease in GDP leads to a reduction of 2 percentage points in targeted public spending per poor person in seven Latin American countries. Half of the impact (1 percentage point) is due to the reduction in per capita GDP itself, which reduces spending even when the share of targeted spending in GDP remains constant. The other half of the impact comes from the increase in the number of poor people due to the crisis. These results emphasize the need to create better counter-cyclical safety nets if one is to be hopeful that poverty will be alleviated during crises. (During expansions, social spending as a share of total spending increases, which is good for the poor because they tend to benefit from such spending, but it would be better to save at least some public funds during expansions in order to better protect the poor during recessions. In other words, there is some evidence that Governments try to be pro poor, or at least pro-social, but they act in a short-sighted way which does not allow for good safety nets during crises).

Table 5.2: Elasticity to Growth of Targeted Public Spending per Poor Person

	Expansion	Recession
Unitary elasticity of per capita growth to itself	1.00	1.00
Elasticity to growth of total spending as a share of GDP	NS	NS
Elasticity to growth of social spending as a share of total spending	0.69	NS
Elasticity to growth of targeted spending as a share of social spending	NS	NS
Minus the elasticity to growth of the headcount index of poverty	0.94	0.94

Source: Own estimates. NS indicates elasticities which are not statistically significant at the 5 percent level. The estimates are based on data for seven countries.

BOX 5.1: TARGETED PUBLIC SPENDING DURING ECONOMIC CRISES: A FRAMEWORK

Wodon, Hicks, Ryan and Gonzalez (2000) analyze how targeted public spending per poor person is affected by growth and recessions. Denoted by *SP* the total targeted spending for the poor by the government, by *H* the headcount index of poverty, and by *N* the total population, the targeted public spending per poor person is *SP/(H*N)*. This can be expressed as a function of the targeted budgetary spending as a share of GDP, denoted by *SP/GDP*; the level of GDP per capita, denoted by GDP/*N*; and the inverse of the headcount index of poverty, denoted by 1/*H*. Hence:

$$\frac{SP}{H*N} = \frac{SP}{GDP}\frac{GDP}{N}\frac{1}{H}$$

To assess how economic expansions or recessions affect how much targeted public spending reaches each poor person, we apply first differences to the logarithm of the above equation, and divide each side of the resulting equation by the growth in per capita GDP. This yields:

$$\frac{\Delta Log(\frac{SP}{H*N})}{\Delta Log(\frac{GDP}{N})} = 1 + \frac{\Delta Log(\frac{SP}{GDP})}{\Delta Log(\frac{GDP}{N})} - \frac{\Delta Log(H)}{\Delta Log(\frac{GDP}{N})}$$

The elasticity to growth of targeted spending per poor person is one plus the elasticity to growth of the share of targeted spending in per capita GDP, minus the elasticity to growth of poverty. To increase targeted spending per poor person during a crisis, the left-hand side should be negative. If the elasticity of poverty reduction to growth is –1, one needs an elasticity to growth of the share of targeted spending in GDP below –2 in order to maintain targeted public spending per poor person constant. This is unlikely. To see why, decompose the change in targeted public spending per poor person into three components: a) the change in total public spending *TS* as a share of GDP, denoted by *TS*/GDP; b) the change in the share of total public spending allocated to the social sectors, denoted by *SS/ST*; and c) the change in the share of social spending allocated directly to the poor through targeting, denoted by *SP/SS*. This yields:

$$\frac{\Delta Log(\frac{SP}{GDP})}{\Delta Log(\frac{GDP}{N})} = \frac{\Delta Log(\frac{TS}{GDP})}{\Delta Log(\frac{GDP}{N})} + \frac{\Delta Log(\frac{SS}{TS})}{\Delta Log(\frac{GDP}{N})} + \frac{\Delta Log(\frac{SP}{SS})}{\Delta Log(\frac{GDP}{N})}$$

The first term on the right-hand side is the elasticity to growth of the share of GDP devoted to budgetary spending. The second and third terms deal with the reallocation of expenditures within a given overall budget. To sum up, the elasticity to growth of targeted spending as a share of GDP is decomposed into five elements: a) the unit elasticity of growth to itself, which leads to a decrease in targeted spending per poor person when GDP goes down; b) the elasticity to growth of total spending as a share of GDP, which measures overall pro- or counter-cyclicity; c) the elasticity to growth of social spending as a share of total spending (reallocation effects within total spending); d) the elasticity to growth of targeted spending as a share of total spending (reallocation effects within social spending); and finally e) the elasticity to growth of poverty, which takes into account the increase in the total number of the poor during a recession.

Safety Nets Help To Protect The Poor From Economic Shocks

Social protection systems, including safety nets, help the poor to deal with the risks brought about by economic shocks. A recently drafted World Bank Social Protection Strategy Paper (World Bank, 1999a; see also Holzmann and Jorgenson, 1999) places social protection in the context of social risk management. It makes the point of dividing social risk management strategies into three types: risk reduction, risk mitigation and risk coping. Under risk reduction fall macro economic management, regulations, and institutional development policies that help prevent crises from occurring. While these prevention policies are important, they are too general to be part of the social protection system, which consists mainly of mitigation and coping strategies. Risk mitigation strategies are developed before a shock to reduce the impact of the shock once it occurs. They include for example income diversification and insurance mechanisms, both formal and informal. Risk coping strategies are implemented after a shock to deal with the impacts of the shock not covered by risk mitigation policies. Table 3 from Gill (1999) provides an overview of some of the main government and private sector policies.

Table 5.3: Classifying Government and Private Risk Management Measures

Nature of Policy	Government Led	Private sector Led
Mainly Prevention	- Macroeconomic policies	- Infrastructure investments
(risk-reducing)	- Financial regulations	- Human capital investments
- regulatory	- Infrastructure investments	- Portfolio diversification
- or taxpayer funded	- Labor-related regulations	
- universal	- Human capital investments	
Mainly Insurance	- Unemployment insurance	- Individual savings
(risk-mitigating)	- Severance funds	- Sale of assets (e.g. land)
- inter-temporal transfers	- Job protection statutes	- Labor force participation
- premium funded	- Public work guarantees	
- non-poor and poor		
Mainly Assistance	- Public work programs	- Inter-household transfers
(risk-coping)	- Means-tested cash transfers	- Community solidarity
- within period transfers	- Conditional cash transfers	- Support from NGOs
- taxpayer funded	- Commodity transfers	- Public-private partnerships
- targeted: focus on poor		

Source: Gill (1999)

In this chapter, the focus is on publicly provided or mandated safety nets, but this does not mean that private risk-coping strategies should not be taken into account. There are clearly linkages between private[1] and public coping strategies. As mentioned in chapter 4, some private short-term strategies may have permanent effects that make it difficult to reduce poverty in the longer term. This is the case when the nutrition of certain family members suffers. It is also the

[1] To cope with the income losses induced by shocks, the poor adopt a wide variety of coping strategies. These may include moving from formal to informal sector employment; working longer hours and/or working at a second job; promoting the labor force participation of additional family members such as spouses and children; selling (or consuming in the case of farmers) productive and other assets, including stocks; migrating temporarily or permanently in order to search for employment opportunities; reducing consumption patterns, including restricting the food intake of family members, taking children out to school to reduce education expenditures, or postponing health care expenditures; relocating and/or restructuring households, for example by having several families living under one roof; drawing on outside help both in kind and in cash, including support from local communities, friends and relatives, and private institutions such as NGOs (this in turn highlights the role of social capital). One interesting paper about the gender dimension of these strategies is Cunningham (1998..

case when children are put to work, and when the substitution between work and schooling reduces their endowment in human capital, and thereby their future likelihood of emerging from poverty (see also Ezemenari, 1997, for a discussion of the links between public and private transfers). Now, there are typically more mechanisms available for coping with idiosyncratic as opposed to covariant shocks. However, even among the programs designed to deal with covariant shocks, one can identify a number of alternatives (Hicks and Wodon, 2000):

- Emergency employment programs involving public works, often using labor intensive methods, commonly called workfare;
- Social funds (discussed in chapter 6), which establish special programs, usually in rural areas, for financing small scale public works identified by local community groups;
- Nutrition and food interventions, particularly those targeted at vulnerable groups such as children and pregnant women. These may take many forms, including food distributions, food stamps, and food served in schools or community kitchens;
- Systems of direct cash grants targeted to the poorest, which may be conditioned on favorable behavior (such as school attendance and/or health center visits);
- Other instruments, such as pensions and unemployment insurance, including systems of mandatory severance payments upon termination.

Another way to organize the discussion is to look at programs in terms of the age groups they serve, on the basis of the fact that different age groups have different needs. Following Arriagada (1999), the following needs can be identified by age group:

- Ages 0–5. Early childhood development: Babies and toddlers have one of the highest probability of being poor in Argentina. This group can be served through nutrition programs, the provision of child care, pre-schools, etc. (Deutsch, 1998).
- Ages 6–14. Primary and lower secondary education: School enrollment and attendance rates vary between countries. In poor countries, cash grants conditional on primary school attendance may make sense, but in richer countries where primary enrollment is near universal, it is better to focus on secondary schools.
- Ages 15–24. Higher levels of education and entry in labor force: This is a difficult group which is often underserved. Remedial education, vocational training, and reproductive health programs may help in general. Social protection interventions can be school-based for younger fellows, and work-based for older fellows.
- Ages 25–64. Employment: This is one of the most important group because it includes bread-winners and care givers. Workfare and job-related programs help.
- Ages 65+. Retirement: Members of this group need income transfers if they are not covered by social security schemes (pensions) and cannot rely on relatives.
- All ages: Finally, there are some issues which affect all age groups, such as the lack of health care, bad housing conditions, or the need for relocation due to natural disasters. Social protection mechanisms can play a role as can other interventions.

There is no magic or "best" taxonomy for the range of safety nets and social protection interventions that can benefit the poor, but the use of various classification schemes help in analyzing country-specific programs and identifying gaps in coverage as well as program duplications. These classifications can be handy to streamline and/or reinforce public policies.

Good safety nets to deal with covariant shocks have a number of characteristics. Within LAC, at present almost all countries have some mix of the above programs in varying degrees. However, very few if any programs completely fulfill the criteria of an ideal safety net which should have the following characteristics (see Grosh, 1995, for more details):

- It should be based on a sound analysis of who is likely to be affected the most by crises, and what kinds of coping mechanisms are normally used by those affected;
- It should provide sufficient coverage of the population to be reached, particularly the most vulnerable and excluded groups;
- It should be well-targeted to the poor, with clear eligibility and termination rules, so that access is simple and predictable;
- It should be supervised by well-functioning institutions already in place;
- It should be counter-cyclical (i.e. receive more funding when there is an economic crisis), and in some cases implemented automatically according to pre-agreed triggers such as a rise above some level in unemployment or poverty;
- It should be fiscally sustainable;
- It should be able to provide benefits quickly, with as large as possible a share of the costs resulting in net increases in incomes;
- It should complement, not substitute for, private safety net programs and other social protection mechanisms;
- It should be scaled back when the crisis is over.

A First Group of Safety Net Programs Provide Temporary Public Employment

Workfare programs provide temporary employment through specifically designed public works projects. The classic example is Trabajar in Argentina. In this program, projects are identified by local governments, NGOs and community groups, and can provide employment for no more than 100 days per participant. Project proposals are reviewed by a regional committee, and projects with higher poverty and employment impacts are favored. Workers hired by the project are paid by the government, specifically the Ministry of Labor. The other costs are financed by local authorities. Example of eligible projects include the construction or repair of schools, health facilities, basic sanitation facilities, small roads and bridges, community kitchens and centers, and small dams and canals.[2] The projects are often limited to poor areas as identified by a poverty map. Moreover, wages are set al low levels, so that the workers have an incentive to return to private sector jobs when these are available. Thus, the program involves self-targeting apart from geographic targeting. Overall, targeting of the poor under Trabajar II (the second round of the project) has been reported to be quite good, with 75 percent of the funds reaching the bottom 20 percent of the income distribution, and 40 percent reaching the bottom 5 percent. However, the supply of jobs in the program depends on budgetary allocations as well as the ability of local communities to identify viable projects. As good as it is, Trabajar has

[2] These activities are fairly similar to those financed by social funds. One of the differences between a social fund project and a workfare project is that the workfare project is likely to be supervised by local authorities, rather than by independent agencies, and construction is typically not contracted to the private sector, but is carried out by the sponsoring agency, which can include local and provincial governments, private groups, and national organizations. Another difference is that workfare programs have the generation of employment and income as their priority, while social funds focus more on the quality of the infrastructure produced.

provided employment to no more than 1 or 2 percent of the labor force, at a time when unemployment has ranged from 13 to 18 percent of the labor force.

Large workfare program have also been implemented by the government of Chile during the period 1975–88. The objective of these programs was to absorb workers displaced from the public sector, and to reduce unemployment during the adjustment period. As for Trabajar, these programs provided employment in emergency public works, including maintenance and repairs to roads and schools, construction of parks, forestry projects, etc. The programs were administered by municipalities, and were gradually built up to a peak in 1983, when they employed about 13 percent of the total work force (over 500,000 workers). The programs were gradually reduced as private sector employment increased, and finally phased out completely in 1988. The two largest programs offered manual labor at very low wages to ensure self targeting. Most of the workers were unskilled, and they received one-fourth of the then current minimum wage (about one half of the market wage). One of every four participant was a woman. However, while the program was considered successful in terms of reducing poverty and the social impact of unemployment, the quality of the public works produced was notably low, particularly as the program expanded in size. In addition, it is not clear that all the workers in the program would have been unemployed without the program. An evaluation found that 32 percent of the participants had no work experience prior to participating in the program, and 46 percent had retired voluntarily before joining the program. Many of those with no experience were women who went to work for the first time (Universidad de Chile, 1992).

In Mexico's rural areas, temporary public works also provide employment below minimum wage in off-season periods. In Mexico, where almost half of the budget for employment opportunities for the poor is devoted to the Programa de Empleo Temporal (PET), the program provides short-term employment on public projects in poor rural areas. Employment is for up to 88 working days at 90 percent of the minimum wage. In 1999, 93 million work days and 1 million jobs were to be created. Apart from benefiting participants through the provision of income support during periods of underemployment, PET benefits communities by building infrastructure and responding to local needs. Projects are labor intensive. Examples include irrigating land, paving roads, clearing land, improving housing, and installing water and sewerage systems. As detailed in the Mexico poverty assessment, the available data suggests that targeting is relatively good. Participants are poorer than non-participants. The data also show that participants need the temporary jobs more than non-participants because they do not benefit as often from an occupation that keeps them employed all year long. The program thus alleviates underemployment. Yet, the program does not reach the smallest (and probably poorest) rural communities. On average, PET communities are almost twice as large as non-PET communities. PET communities have better access to electricity (74 versus 60 percent), public phones (33 versus 19 percent), pre-schools (81 versus 67 percent), primary schools (89 versus 82 percent), and telesecondary schools (22 versus 11 percent). Part of this targeting problem may be due to the higher cost of reaching smaller communities.

The cost of generating US$1 in additional income for the poor through public works is typically in the range of US$3 or more. The advantages of workfare programs include their ability to expand quickly during a crisis, once the basic mechanisms have been established, and to reach the poor through area targeting and, within poor areas, through self targeting thanks to the low wages. But a problem with these programs is that the cost of generating US$1 in

additional income for the poor through public works is typically large, in the range of US$3 or more. To understand why, the measure of cost effectiveness and its decomposition proposed in Box 5.2 are useful. The measure of cost effectiveness used is the share of total program costs which reaches the poor through the program's wages. This share is a function of four parameters: the proportionate wage gain, the targeting performance, the wage share, and the budget leverage. A reasonable value for the proportionate wage gain may be 0.5 because the workfare wages are low and the poor typically find some other way to generate resources, for example through part-time informal employment when they do not have access to the programs. Because of the self-selection involved and the priorities given to poor areas, targeting performance may be good, at about 0.8. The wage share can often be obtained from administrative records by multiplying the number of work days created by the program by the wage rate, and dividing this amount by the total cost of the program. In many cases, the wage share will not exceed 0.7. Finally, when the program is almost entirely financed by the federal state (even though project selection may be done at the local level), the budget leverage is equal to one (in the case of Trabajar, there is budget leverage, but while this saves money for the central government, it still has to be paid by local governments). The measure of cost effectiveness is obtained by multiplying the four parameters. It thus costs three or more dollars to the national or federal government to transfer one dollar to the poor in additional wages.

The notion that it costs three or more dollars to transfer one dollar of income to the poor through workfare could be challenged, in that the benefits could be higher or lower. Arguments could also be put forward to argue that the net transfers to the poor are lower than predicted by the decomposition in Box 5.2. For example, if workers are paid by local authorities, there are some risks of corruption and political bias in the selection of program beneficiaries. Second, the poorest communities may not always be well positioned to submit proposals for projects and/or to contribute to non-wage costs when the central government only pays for wage costs. In this case, the targeting performance of the program may suffer. But the benefits could also be higher for at least two reasons (this is discussed, among others, by Maloney, 2000):

- First, the method presented in Box 5.2 does not take into account the benefits of the public works themselves, which can be substantial if the workers are put to good use. The problem, however, is that these benefits will be enjoyed during the whole life of the infrastructure built, while what the poor need in times of crises is immediate income support. If the poor have high discount rates (which they do in general, but especially in times of crisis when their resources do not provide for basic subsistence), the discounted value of the benefits generated by the public works may be quite low. Moreover, since the emphasis is on job creation rather than investments, there may be a bias toward "make work" or prestige projects that may not be highly valuable. This may be particularly true in a crisis, when a rapid expansion of the program exhausts the backlog of viable projects.
- Second, the method presented in Box 5.2 assumes that only the net proportionate wage gain must be taken into account for measuring the program's impact. But in periods of high unemployment, at least part of the difference between the public works wage and what the program participant would have earned without the program will be available as earnings for another worker who does not participate in the program and who is also underemployed. At the extreme, the whole wage rate could be taken into account in the cost-benefit analysis, which would greatly enhance the cost-effectiveness of such programs.

Box 5.2. Measuring the Cost-effectiveness of Public Works

Adapting slightly Ravallion (1999), assume that without public works, an individual has a probability F^* to find employment at market wage W^*. Expected earnings are F^*W^*. With public works, the individual earns the public works wage W. If the individual can continue to search for private or self-employment while participating in public works, with probability F of finding such employment, the expected wage with public works is $FW^*+(1-F)W$. The net wage benefit from the program for the worker is $NWB = (1-F)W - (F^* - F)W^*$. If the worker gets unemployment benefits or a subsistence allowance S, the wage benefit is reduced to $NWB = (1-F)W - (F^* - F)W^* - (1-F^*)S$. If the program costs G to the government per worker employed, a measure of cost effectiveness is the share of public expenditures transferred to workers as wage gain NWB/G. This measure can be decomposed as follows:

$$\frac{NWB}{G} = \frac{C}{G}\,\frac{(W+L)}{C}\,\frac{W}{(W+L)}\,\frac{NWB}{W}$$

budget leverage | *wage share* | *targeting performance* | *proportionate wage gain*

The determinants of cost-effectiveness are a) the leverage ratio C/G, where C is the total cost per worker including community funding; b) the wage share $(W+L)/C$, where W stands for wages paid to the poor and L stands for leakage due to wages paid for the non-poor; c) the targeting performance $W/(W+L)$ which is the percentage of wages reaching the poor; and d) the proportionate wage gain NWB/W. This model can be extended to take into account the benefits of the infrastructure built by public works, but these benefits tend not to be as immediate.

Lessons can be learned from the reform of Argentina's public employment program. In Argentina, unemployment reached 40 percent in the poorest population decile of the greater Buenos Aires area in 1996–97. This provided an impetus to improve Trabajar, Argentina large public works and temporary employment program (300,000 participants from May 1997 to October 1998). While keeping the self-targeting feature of the program (as in Mexico, minimum wages insure participation by the poor), the focus of the reform was placed on increasing community participation and funding in the choice of the projects to be financed. Trabajar now works in collaboration with local community groups, NGOs, and municipalities who present projects for selection. While Trabajar covers the cost of labor, local sponsoring groups cover non-wage costs. Projects must first be approved for technical feasibility. Next, they are selected on a points basis. More points are awarded to projects located in poorer areas, yielding larger public benefits, benefiting from well-regarded sponsoring community groups or NGOs, and reducing labor costs below the minimum wage. These new features have improved targeting both at the geographic and individual levels. Apart from increasing cost-effectiveness at the federal level, the involvement of local groups has also improved the quality of monitoring and feedback. All problems have not been solved however. There remains evidence of political influences in the choice of participants and of gender discrimination (few women are selected in some areas). Moreover, local groups are not always well positioned to contribute to non-wage costs, and the provision of jobs may take precedence over the projects' quality in some areas.

Social investment funds were originally conceived as an alternative to workfare programs, but their mission has changed since then. Social Investment Funds (SIFs) the original World Bank response to the social aspects of adjustment programs, and some of the earliest funds (e.g., Bolivia's Emergency Social Fund created in 1991) were designed primarily to provide employment (Jorgensen, Grosh, and Shacter, 1992). In fact, SIFs were started in part to avoid the problems associated with emergency public works programs. While both workfare and social fund programs build projects in the public sector, there are important differences. Social fund finance the material and labor costs of a project, although some local labor may be donated as a community contribution. A workfare program generally finances the labor cost of a project at the national or federal level, and asks that local governments or agencies provide for the material costs. Thus, there is a clear incentive in workfare programs for the local agency to find labor intensive methods of construction, and choose labor intensive projects. Since SIF projects are bid out to the private sector, often the most modern and capital intensive construction methods are used, although in some cases social funds specify minimum employment levels to be attained in their operations. Moreover, when construction work is involved, it is not rare to see social funds using a skilled manpower paid at market wages because the quality of the infrastructure built is considered as more important than the provision of employment for the poor. This is the case for example with the Honduras social fund which originated from the transformation of an employment generation program in the early 1990s but does not consider the objective of employment creation as its main priority nowadays. On the other hand, most social funds are targeted to poor areas through the use of a poverty map as are workfare programs (or a map of non-satisfied and non-monetary basic needs; see also chapter 6).

Social funds can be used in times of crisis for the delivery of social safety nets. One of the clear advantages of social funds is that they have strong organizations with relatively good systems for project management and monitoring. The existing social fund in Honduras, for instance, has proven highly valuable in directing emergency assistance to local villages after Hurricane Mitch. The idea is thus to work with social funds to modify their operations during a crisis, such as by putting more emphasis on labor intensive projects, and by having the fund involved in hard hit areas. For this to work, it is a good idea to identify labor intensive projects in advance of a potential crisis, so that these are ready for funding should a crisis come about.

A Second Group of Safety Net Programs are Food-based

Food safety nets have been popular in LAC countries. Nutrition and food programs take a variety of forms. Subbarao et al. (1997) have identified about thirty countries using food policies with redistributive aims. Among these countries, price subsidies are used as often as feeding programs and food for work requirements, and more often than food quantity rationing and food stamps.[3] In fact, many workfare programs now providing wages in cash initially started as "food-for-work" programs. As for direct feeding programs, they provide food to needy

[3] Food stamps are an alternative between cash and in kind transfers. Food stamps do not requiring a complicated system of storage and transport of food, while making use of the existing private food distribution network. In Honduras, the food-stamp program used to also cover medicines and school books. In Jamaica, the food-stamp program was introduced in place of general food subsidies, which was better to reach the poor (Grosh, 1992).

recipients, through direct delivery of unprepared foods from a program warehouse, delivery of prepared food from a community kitchen, or the provision of a lunch or breakfast to children in school. School feeding programs are especially popular in Latin America (see, e.g., Phillips et al., 1995, on Honduras; Dall'Acqua, 1991, on Brazil; and Jacoby, Cueto, and Pollitt, 1996, on Peru). One benefit of these programs is the incentive given to keep the children in school in order to have them fed, and to improve their learning abilities while in school (chapter 4). But from a nutrition point of view, the prime beneficiaries of these programs may be other members of the family if the children are not fed at home because the parents know that they will receive a school lunch. Moreover, as many other programs, food subsidies and distribution systems can have negative incentive effects, for example on the supply of labor (Sahn and Alderman, 1995).

Food safety nets help to reduce malnutrition, but the impact may be limited. Chronic malnutrition is found to be highly correlated with family income. Food safety nets can help to resolve these problems. However, evaluations of nutrition programs generally indicate that there is only a small improvement in nutrition compared to the case where the family receives an equivalent cash grant. This is because families may substitute free food for their own purchases, and use the savings for other purposes. Still, with a food program as opposed to cash grants, there are fewer possibilities of diversion of funds, since food is less likely to be misappropriated than cash. In addition, food is more likely to go to women and be used to improve the welfare of the family, while cash is more likely to be used by men for lower priority activities.

The coverage of the poor through food and nutrition programs tends to be low. In a few countries, the coverage of nutrition programs is extensive (e.g., for Progresa in Mexico and PRAF in Honduras). But according to the poverty assessments that deal with the subject, nutrition programs tend to be insufficiently funded, have limited coverage, and be badly targeted in many other countries. As a consequence, their benefits frequently are received by the non-poor. In Ecuador again, the poverty assessment found that only 5.5 percent of poor households were reached by the various nutrition programs. Coverage of nutrition assistance programs was also found deficient in El Salvador, where the school feeding program reached only 9.6 percent of the poorest children in urban areas and 32.1 percent of those in rural areas. In Brazil, the assessment notes that the coverage of the two priority groups—young children and pregnant and lactating women—has dropped since 1989. By 1993 the main programs served only a small fraction of the eligible population. There may thus be a need to increase the financial resources available in order to extend the coverage of programs that now have a generally limited reach.[4]

Various mechanisms can be used to target food and nutrition programs. A common way of targeting food programs is by linking distribution to a health program, particularly maternal and child health care. In this way, the food serves as an incentive to attend the program, and nutrition education can help improve the use of the food given out. As already mentioned, giving food to women also lessens the possibilities of it being diverted for sale in the market. Self-targeting can be achieved to some extent by subsidizing goods consumed in larger quantities by the poor than by the non-poor, but this is no panacea (Tuck and Lindert, 1996; see also Grosh, 1994, and Cornia and Stewart, 1995, on targeting). Alternatively, food distribution can take

[4] However, it is difficult to assess the effectiveness of nutrition programs because data are scarce. Monitoring and evaluation systems, which are found to be generally deficient with regard to a wide array of interventions intended to reduce poverty, seem particularly deficient when it comes to measuring the impact of nutrition programs.

place at centers located in poor neighborhoods. All these approaches can reduce the administrative burden of targeting programs through means-testing, but they increase the possibility of leakage to the non-poor. School lunch and breakfast programs are also difficult to target at the individual level if one is to avoid stigmatizing some students within the school as being "poor." This is why in many countries, schools from poor areas are targeted rather than students within schools, but untargeted national school feeding programs are also common.

Poverty assessments provide many examples of bad targeting for food and nutrition programs. In Brazil, while the Northeast contained 65 percent of all malnourished children, it received only 41 percent of total spending on nutrition programs in 1993. A workers' feeding program benefited mainly adult formal sector workers earning more than three times the minimum monthly salary. In Argentina, the provision of school meals to pupils in public primary schools was found to have no precise guidelines about targeting. Weak targeting was also found in the implementation of a free milk distribution program. A major national food program launched between 1985 and 1989 did not include adequate mechanisms for the identification and establishment of priorities among the most needy, nor methods of monitoring and evaluation. In Panama, some of the larger social assistance programs are explicitly universal, while others are only partially targeted to the poor. The major school snack program in Panama was likewise found to suffer from a lack of targeting. In Colombia, a program combining feeding and daycare for preschoolers did not sufficiently target the poor and it excluded the rural poor.[5]

Means-tested food subsidies tend to be more effective than other subsidies in reducing inequality and improving welfare. For Mexico, Wodon and Siaens (1999b) suggest that universal subsidies do not perform well for the reduction of inequality and the improvement of welfare. They compare three programs: the now defunct universal subsidy on Tortilla, a program providing one kilo of free tortilla for households with income below two minimum wages, and a program of subsidized milk, also means-tested. The main results were as follows:

- Food subsidies are better than non-food subsidies. Subsidies for basic consumption goods such as tortilla reduced inequality, especially in urban areas, and more so than subsidies for utilities such as water and electricity. However, food subsidies generate price distortions and they are costly. Furthermore, a universal subsidy on tortilla is less effective than would be a similar generalized subsidy for the ingredients needed for making tortilla, such as corn flour.
- Within food subsidies, means-tested subsidies are better than universal subsidies. The marginal impact on inequality and welfare achieved with the universal tortilla subsidies does not come close to the welfare gains achieved with the means-tested subsidies.

The experience Progresa in Mexico is interesting for analyzing targeting mechanisms. The program uses a three-stage targeting mechanism. First, poor rural localities are selected for participation. Next, poor families are selected within participating communities using a multivariate discriminant analysis. Third, local communities may review the Progresa's selection staff and reclassify poor families as non-poor and vice versa. This targeting mechanism is basically sound, and the results appear to be good (Skoufias, Davis, and Behrman, 1999). One concern, however, is that the level of community involvement remains marginal.

[5] It is important when feasible to use distributional weights in the evaluation of the targeting of social programs and other interventions. This is typically not done in poverty assessments. For an exception, see Ravallion and Wodon (forthcoming b).

The targeting process is centralized in part due to the desire to avoid political interference in the choice of beneficiaries. Nevertheless, more efforts could be put to promote the role of communities in targeting. Another related question relates to the need for targeting within poor communities. The higher the proportion of the poor in a community, the less the need to target within that community, especially if targeting is costly not so much administratively, but rather in terms of social cohesion (those who do not get the program may envy those who benefit from it). In Honduras, where the PRAF program is being modified in part on the basis of Progresa's experience, it has been decided to provide support to all families residing in the poor communities that participate.[6]

In order to monitor targeting performance, better data is needed. Several poverty assessments, while not reaching negative judgments on targeting, conclude that it is difficult, given the lack of information and monitoring systems, to reach definitive conclusions about program targeting. In the assessment of Ecuador, the use of geographical targeting methods was found to be limited, and a case was made for improving systems of monitoring and evaluation in order to get a clearer assessment of how many poor and malnourished children are reached. In El Salvador, there are indications that school feeding and other food assistance programs do not discriminate well between the non-poor and the poor groups, indicating a need for refined targeting instruments. But data are lacking, so that "it is not possible to determine the effectiveness and efficiency of existing programs. Existing information systems are unable to provide data on actual criteria for selection of beneficiaries, program costs, or number of beneficiaries in relationship to the target population." Similarly, in Nicaragua, the assessment notes that "it is unknown how much of the resources committed to safety net programs has actually reached the population, and whether those who benefited are those most in need."

There has been a tendency to reduce funding for food subsidies in order to fund other programs. This tendency is illustrated with the policy changes implemented in Mexico (Levy and Dávila, 1998). Universal price subsidies for the consumption of tortilla have been terminated in the first few months of 1999. This change in policy was implemented gradually, and it was not easy given the long history of food subsidies in Mexico's political life. The government is still funding means-tested subsidies for tortilla and milk, and it also maintains a network of stores selling food in rural areas at below market prices. Yet funds have been channeled to Progresa, and to reforms whereby the social security taxes on low income workers have been reduced. Programs such as Progresa are not safety nets, or at least, they were not originally designed to function as compensatory safety nets during crises. Yet these programs do provide valuable benefits which households can rely upon during crises, and the benefits can be increased during a recession if need be. In other words, as is the case for job training programs and social investment funds (see the discussion below), existing programs providing conditional cash transfers can be expanded and modified to serve as safety nets during a crisis. In general however, school related grants will offer only a partial response to crisis situations, because the programs are targeted to families with children already in school, so that some of the poorest who cannot afford to send their children to school are excluded from the programs' coverage.

[6] A rigorous evaluation of Mexico's Progresa is being prepared by the Progresa staff with support from the International Food Policy Research Institute. Preliminary results are available in Progresa (1999). The International Food Policy Research Institute is also going to help for the evaluation of Honduras's PRAF, with a design combining demand and supply-side interventions.

Other Types of Programs Can Benefit the Poor During Crises

With changing labor markets, LAC countries must invest in retraining programs for their urban workers. The modernization of LAC economies and their opening up to international trade implies that some workers will need to specialize in new areas. To help workers adapt to the changing economy, LAC countries are investing in job training programs. The poverty assessment for Mexico contains a discussion of such programs. First, the Programa Calidad Integral y Modernización (CIMO) has provided since 1988 technical assistance and financial support for training and productivity programs that take place within small and medium-sized businesses. In 1997, there were 550,000 beneficiaries. Second, the Programa de Becas de Capacitacion para desempleados (Probecat) was implemented in 1986 as a response to the growth in unemployment that followed the 1982 debt crisis and the subsequent structural adjustment policies. Today, the program provides training to close to 500,000 beneficiaries per year. The program began by providing school-based training. Later, to better match worker skills with local employer needs, an in-service modality was created whereby firms provide training to participants who receive their minimum wage stipend through the program. Upon completion of the training, 70 percent of the trainees are guaranteed employment with the local trainer. Finally, Pileot (Programa de Iniciativas Locales de Empleo y Ocupacion Temporal) was initiated in 1995 to reach the economically disadvantaged in marginalized areas. Thirty percent of Pileot's beneficiaries are rural, versus 9 and 4 percent for the school-based and in-service modules.

Unfortunately, job training programs generate mixed results. In the case of Mexico, the gains from participation in Probecat have been overestimated in past evaluations. Two evaluations of Probecat have been performed using data from, respectively, the 1992 and 1994 cohorts of participants (Revenga, Riboud, and Tan, 1994; STPS, 1998). These evaluations, which where completed before the start of Pileot, suggested that the program had a positive impact on wages, and that it reduced the time needed to find employment. Thereby, the benefits of the programs for participants surpassed its costs for the government. In both evaluations, the analysis relied on a quasi-experiment by comparing a treatment group (the Probecat trainees) with a control group (the urban unemployed in another survey). However, a reexamination of the STPS study using the same data but alternative econometric methods to better control for the endogeneity of participation suggests that the gains from Probecat have been overestimated. The program does not appear to have an impact on employment and wages (Wodon and Minowa, 1999).

A weak impact of job training programs has been observed in many cases in the OECD. The disappointing results of Mexico's Probecat in terms of raising wages and employment are not surprising. Most retraining programs in the OECD have been found to have limited impact (Dar and Gill, 1998). When programs were found to have an impact in the short run, this impact vanished after a few years. As for Probecat, the hiring of the trainees observed with the in-service modality at the end of the program need not imply large net gains. It could well be that without the wage subsidy provided by the government, participating firms would have hired the same workers (this is referred to as a deadweight loss in the literature) or other workers (substitution effect). It may even be that the firms who benefited from the wage subsidies became more competitive, and thereby displaced workers in other firms not benefiting from the

subsidies (displacement effect). In some OECD countries, the combined impact of deadweight losses, substitution, and displacement has been shown to wipe out up to 90 percent of the effects of training and subsidies programs on unemployment. While this does not mean that job training should be terminated, it suggests that rigorous cost-benefit analysis be done.

There may be a tension between the safety net and training components of some job training programs, but this may also represent an opportunity during economic crises. One reason why job training programs have a limited impact on employment and wages may be that the training is provided for too short a period of time (a few months) in order to provide skills valuable in the long run. Some job training programs may rather function as safety net programs providing temporary relief for the unemployed with a self-targeting mechanism not unlike that of public works programs since participants typically receive only the minimum wage. If this were the case, there would be a tension between the objectives of training and income supplementation, since the means to achieve both are not necessarily the same. It is probably better to choose one goal or the other, rather than trying to meat both goals with a single program. On the other hand, even if the decision is made to favor training over safety nets for the objectives of a program during normal times, the program can be extended and modified to serve as a safety net during crises if this is deemed necessary (as is the case with social funds).

Traditional social protection programs such as social security and pensions for the elderly, unemployment insurance and severance payments do not benefit the poor much. These programs are often not accessible for the poor because many belong to the informal sector.

- Poverty assessments suggest that the poor do not benefit from social security systems. The Brazil assessment concludes that most of the outlays for public social insurance are received by better-off households. It is estimated that heads of poor households in Brazil receive only two percent of social security benefits. The Colombia assessment concludes that "by all indications, the current social security system does not help the poor. The program was designed for formal-sector wage earners and government employees in the middle of the income distribution." In Argentina, "expenditures on social security fall largely on the upper-income groups. Families/persons in the lower-income quintiles receive much less benefit from the old-age and disability pension system." In Costa Rica, "over the past two decades, inequities in the pension system have increased. The distribution of social benefits on pensions shows the highest income groups benefiting disproportionately." Several assessments refer to actual or prospective reforms of social security systems (e.g., in Colombia) that are in large measure based on the Chilean experience. An explicit focus on the incorporation of the poor into the reformed schemes is, however, for the most part lacking. For a discussion of pension issues for the poor, see Holzmann and Packard (1999).
- Unemployment insurance is common to Europe and North America, but relatively rare in Latin America, in part because of its high cost. As a result, some poverty assessments indicate that social protection is lacking. In Colombia, it is concluded that "there is no system of income support to protect the unemployed from falling into poverty." On the other hand, the current labor legislation in many LAC countries mandates a severance payment on termination that is a function of the number of years worked. Normally, this is about one month's salary for every year of service, up to some maximum. This may be supplemented by an unemployment insurance scheme (as in Argentina and Brazil for formal sector workers) in which monthly contributions from payrolls and/or the employer entitles the

worker to a monthly payment over a limited time horizon, with the payment set low enough to reduce disincentive effects. But since the formal sector in many countries is less than half of the total work force, even where it exists, the coverage of unemployment insurance/severance payments is far from complete, and the exclusion of the informal and rural sectors means that these mechanisms miss those areas containing many of the poor.

Tools are Available for Assessing the Targeting Performance of Programs

Alternative targeting indicators have been used in the literature, and techniques exist for assessing the extent and impact of targeting. There is a substantial literature on targeting the poor (see for example Besley and Kanbur, 1993, and Sen, 1995). Choosing an optimal targeting policy is a complicated matter because of the large number of factors to be taken into account, including the behavioral responses of poor and non-poor households to targeted programs, the administrative costs of programs, and the availability of different alternative indicators to target the poor. Most of the empirical work in the literature does not consider these questions, in order to restrict the analysis to the performance of varying indicators in identifying the poor, or in serving as instruments for transfers. Examples of empirical work using alternative targeting indicators include Ravallion (1993) and Baker and Grosch (1994) on geography, Ravallion and Sen (1994) on land ownership, Ravallion and Datt (1995) on public works, and Cornia and Stewart (1995) on food subsidies. In this section, we present two simple and useful tools which can be used for analyzing and improving targeting. The first tool deals with the evaluation of alternative targeting indicators for proxy means-testing. The second tool deals with decomposing the impact on welfare of the targeting of beneficiaries on the one hand, and the allocation of funds among beneficiaries in a differentiated way on the other hand.

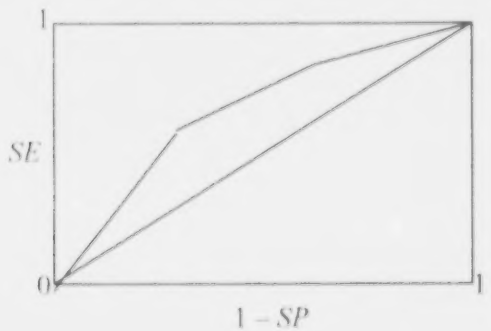
ROC (Receiving Operating Characteristics) curves provide a simple way to analyze targeting issues. ROC curves enable an analyst to look at the two types of errors which can be committed in using indicators for selecting program beneficiaries, namely identifying as poor a non-poor household and identifying as non-poor a poor household (Box 5.3). To any binary outcome model (probit or logit), one can associate a corresponding ROC curve providing a summary of the two types of errors committed in using the model for targeting. When using prediction commands, statistical software use the cut-off point of one half in classifying households as poor or non-poor. That is, a household with an estimated value of the right hand side of the regression larger than 0.5 is classified as poor, while a household with a value below 0.5 is classified as non-poor. But the cut-off point can be changed if one wishes to reduce any one of the two types of errors of targeting. When using a cut-off point of zero, all households are considered as poor, and the probability of identifying as poor a non-poor household is one. Similarly, when the cut-off point is equal to one, the probability of identifying a poor household as non-poor is one. Hence, the type I and type II errors depend on the value of the cut-off point, and this can be represented graphically by a ROC curve.

Box 5.3. Targeting the Poor Using ROC Curves

Wodon (1997b) shows how to apply ROC analysis to targeting issues. Denote by P, P^-, and P^+ the number of the poor, the number of the poor classified as non-poor and the number of the poor classified as poor by a model. Also denote by NP, NP^-, and NP^+, the number of the non-poor, the number of the non-poor classified as non-poor and the number of the non-poor classified as poor. Sensitivity $SE = P^+/(P^- + P^+) = P^+/P$ is the fraction of poor households classified as poor. Specificity $SP = NP^-/(NP^- + NP^+) = NP^-/NP$ is the fraction of non-poor households classified as non-poor. The probability of type I and type II errors are one minus SP, and one minus SE.

	Non-Poor	Poor
Predicted Non-Poor	$SP = NP^-/(NP^- + NP^+)$	$1 - SE = P^-/(P^- + P^+)$
Predicted Poor	$1 - SP = NP^+/(NP^- + NP^+)$	$SE = P^+/(P^- + P^+)$

When using a statistical package and running a probit or logit regression for poverty, each observation is given an index value equal to the predicted right hand side of the regression. This predicted value is used to classify the households as poor or non-poor, with the computer typically using one half as the cut-off point (those above the cut-off point are classified as poor). But this cut-off point can be changed. A ROC curve is a graph that plots SE as a function of $1 - SP$ for alternative values of the cut-off point. The figure below shows a ROC curves. At the origin, $c = 1$, $SE = 0$ and $SP = 1$. At the upper right corner, $c = 0$, $SE = 1$, and $SP = 0$. The higher the ROC curve, the better its predictive power (a 45 degree line has no predictive power while a vertical line from the origin to the top of the box followed by a horizontal line until the upper right corner has perfect predictive power). The area below a ROC curves provides a summary statistic of the predictive value of the underlying model. An area of 0.5 corresponds to the 45 degree line which has no explanatory power. An area of one corresponds to perfect prediction.



If the ROC curve of one targeting indicator (or set of indicators) lies above the ROC curves of all the alternatives, that indicator will typically be the best to target the poor for the class of social welfare functions based on the two types of errors that can be committed through targeting. If two ROC curves intersect, the choice of the best indicator will depend on the normative weights attached by the policy maker to the two types of errors.

BOX 5.4: TARGETING, PROGRAM BENEFICIARIES, AND ALLOCATION OF FUNDS AMONG THEM

The goal is to assess the impact on welfare of targeting social programs. Denote by $\bar{y}$ the mean income (or consumption) across the whole population, and by G the Gini coefficient of inequality. A standard function used in the literature for social welfare is:

$$W = \bar{y}\ (1 - G)$$

This function takes into account not only absolute, but also relative deprivation. Let x be the program benefit. We evaluate the effect of increasing the benefits to x(1+e), where e is a small constant. If $\bar{x}$ denotes the mean benefit, and η is the Gini income elasticity of the program (defined in Box 2.1), then the marginal social welfare gain from expanding the program is:

$$dW \approx \bar{x}\ (1 - \eta G)\, e$$

Considerations related to both growth (as represented by the mean benefit) and distribution (as represented by the Gini income elasticity) must be taken into account in the evaluation of the program. As shown by Wodon and Yitzhaki (1999b), the above framework can be extended by decomposing the distribution component to see the impact on welfare of targeting on the one hand, and of the allocation mechanism among beneficiaries on the other hand. To differentiate between targeting and internal progressivity, define z as the targeting instrument:

$$z = \begin{pmatrix} 1 & if\ \ h \in P \\ 0 & if\ \ h \notin P \end{pmatrix}$$

where h denotes a household and P is the participants set (z is equal to one if the household participates in the program and zero otherwise). The variable z is the indicator of targeting, $\bar{z}$ is the proportion of participants in the population, and $\bar{x}/\bar{z}$ is the average benefit per participant. Dividing both the numerator and the denominator for dW by $\text{cov}(z, F(y))$ and $\bar{z}$ yields:

$$\eta = \frac{\text{cov}(x, F(y))}{\text{cov}(z, F(y))} \frac{\bar{z}}{\bar{x}} \frac{\text{cov}(z, F(y))}{\text{cov}(y, F(y))} \frac{\bar{y}}{\bar{z}} = \eta_A \eta_T$$

where η_A and η_T are the allocation and targeting Gini elasticities of the program. The overall Gini income elasticity of the program, which determines its impact on welfare, is decomposed into the product of a progressivity term among participants (allocation effect), and a targeting term for participation in the program. The equation is useful to assess whether the (lack of) performance of a program is due to its targeting or to the allocation of benefits among beneficiaries. A highly progressive program will be a program with a negative overall elasticity ($\eta < 0$). Since $\text{cov}(y, F(y)) > 0$, the targeting elasticity can be positive or negative, depending on whether $\text{cov}(z, F(y)) > (<) 0$. Therefore, if a program is well-targeted ($\eta_T < 0$), it must be that $\eta_A > 0$ to have a well structured program overall. On the other hand, if a program is ill-targeted ($\eta_T > 0$) it can still be progressive if $\eta_A < 0$. By the same token, a well-targeted program can have limited effects on inequality and welfare if the allocation among beneficiaries is not progressive. Thus, for an overall elasticity to be negative, which is the best case for a progressive program, it must be that $\text{cov}(x, F(y)) < 0$. This can be done either through good targeting (declining participation as income increases) or through a declining size of benefits as income increases.

Methods also exist for decomposing the impact of targeting on welfare into the targeting of beneficiaries and the allocation of program funds among beneficiaries. Wodon and Yitzhaki (2000b) show how to decompose the impact on welfare of targeted social programs into various components. The methodology is explained in Box 5.4. The method was applied to three social programs using data from Mexico previously mentioned in this report: Liconsa (means-tested milk subsidies), free tortilla (means-tested as well), and Procampo (cash transfer for farmers, not means tested but allocated in proportion of the area of eligible land cultivated). The three programs are interesting because they have different targeting and allocation rules. The results show that if only the targeting Gini elasticity were taken into account, Procampo would be highly redistributive, and more so than the two other programs in rural areas. In other words, a large number of Procampo beneficiaries are poor. However, some Procampo beneficiaries are fairly wealthy and receive their cash transfers in function of the amount of land cultivated, which is large. That is, the allocation rule among Procampo beneficiaries dramatically reduces the redistributive effect of the program. As for the comparison of the free tortilla and milk subsidy programs, it can be shown that the allocation mechanism for Liconsa (higher amount of subsidized milk for a larger number of children) improves its performance, as compared to the allocation of Tortibono (fixed amount of Tortilla per household, whatever its composition and size). The gains from the Liconsa allocation mechanism are of the order of 20 percent.

CHAPTER VI: EMPOWERMENT

THIS REPORT HAS A CENTRAL FOCUS, WITH CORRESPONDING LIMITS

The comparative advantage of this report lies in the use of quantitative methods for the analysis of objective indicators of well-being and the evaluation of public policies. This report has analyzed the trends in poverty and inequality in Latin America and the Caribbean (LAC) from 1986 to 1996, with projections to 1998. It has reviewed the policies which have been implemented to reduce poverty. It has provided a number of new research techniques. To achieve these objectives, the report has relied chiefly on the results of new empirical work using household surveys for twelve countries (Argentina, Bolivia, Brazil, Chile, Columbia, Dominican Republic, Ecuador, Honduras, Mexico, Paraguay, Uruguay, and Republica Bolivariana de Venezuela). While the report has covered a wide range of issues, there are a number of areas that it has not dealt with.

In terms of scope, this report has not analyzed subjective indicators of well-being. Yet these are important, and the available information suggests they could be improved. Social welfare is multidimensional. It has both objective and subjective (i.e. opinion-based) dimensions. In part because of a lack of data, subjective dimensions of welfare have been less scrutinized in the literature than objective dimensions. Yet subjective dimensions of welfare are important, and they can be revealing of the state of mind and priorities of a population.

- For the LAC population at large, Table 6.1 presents the results of a 1999 opinion survey conducted by the Wall Street Journal in fourteen countries. Almost two thirds of respondents believe that their parents had a better life than themselves. Less than half believe that their children will have a better life than themselves. This pessimism may reflect a feeling of economic insecurity as the region operates a transition towards a more open/competitive and less regulated economy. It may also reflect the lack of progress in reducing poverty and improving welfare observed over the last two decades and documented in this report.

Table 6.1: Subjective Perceptions on Expected Changes in Living Standards in Latin America and the Caribbean

	Better	*Same*	*Worse*	*No answer*
Taking everything into consideration, would you say that your parents lived better, the same, or worse than how you live today?	61.2%	22.0%	14.4%	2.4%
And regarding your children, do you believe that they will live better, the same, or worse than how you live today?	46.1%	20.7%	22.0%	11.2%

Source: Mirror on the Americas 1999 poll, Wall Street Journal, quoted by Rodrick (1999).

- For the (very) poor, subjective perceptions matter as well, in that it is not necessarily the material deprivation associated with poverty that is the most difficult to bear. As noted by Wresinski (1999), "The very poor tell us over and over again that man's greatest misfortune is not to be hungry or unable to read, nor even to be without work. The greatest misfortune of all is to know that you count for nothing, to the point where even your suffering is ignored. The worst blow of all is the contempt on the part of your fellow citizens." The realization that the poorest are often not recognized, and do not feel recognized as worthy members of our societies calls for a partnership with them to restore their dignity beyond the provision of material welfare. This has implications for public policy which are not discussed here.

In terms of methods, this report has relied mainly on quantitative as opposed to qualitative, and positive as opposed to normative research. The report has dealt with monetary indicators of well-being (poverty and inequality), and to a lower extent with non-monetary indicators such as infant mortality, life expectancy, literacy, education, and access to safe water. For both types of indicators, the report has relied on quantitative (vs. qualitative) and positive (vs. normative) research. This provides only a partial view of the issues, and other World Bank studies have used instead qualitative and normative methods of research (Box 6.1):

- A recent example of qualitative research completed at the World Bank as part of the background work for the World Development Report 2001 on poverty is the "Consultations with the poor" project (Narayan et al., 1999a). This ambitious undertaking provides insights on how the poor perceive their conditions, and on what are their own priorities for action.
- A smaller recent study also completed as part of the background work for the World Development Report 2001 combines qualitative research with a normative analysis (Wodon, 2000b). Normative analysis does not receive much attention in the present report. Yet beyond the analysis of what is, the analysis of what ought to be is needed to motivate action.

In terms of focus, this report has dealt with poverty as opposed to extreme poverty. When dealing with extreme poverty, special efforts are needed to empower the very poor. There is a fine line between poverty and extreme poverty. Policies which may be effective for the poor may not work for the poorest. In the second study mentioned in Box 6.1, building on a report written for UNICEF, Redegeld (2000) discusses topics which have not received much attention in the literature on poverty, such as how cultural and artistic programs may help in breaking the vicious circle of deprivation which prevents the poorest from fully participating in the life of society. Redegeld's starting point is that identifying the poorest members of a community is difficult. Moreover, even if the poorest are identified, there is no guarantee that they will actively participate in the programs which could improve their current living conditions and future prospects. Redegeld (2000) highlights key factors which can enable development agencies to reach the poorest and allow them to be full partners in the agencies' programs:

- Building and sharing knowledge with the very poor: Often the poorest are excluded and out of reach. This exclusion means that typically, the very poor's situation and their own efforts to emerge from poverty will not be known to an outsider. For the outsider to acquire an in-depth knowledge of the very poor, tools are needed. For example, a close proximity for a long period of time may be necessary for acquiring a genuine knowledge of the aspirations of the very poor. But for proximity to work, the very poor need a clear understanding of the intentions of those who want to help them. That is, reciprocity and mutual understanding are basic conditions to establish trust on which knowledge can be built and shared.
- Basing actions on the aspirations of the poorest instead of their problems: The projects which are the most successful in reaching the poorest tend to be those which are based on their aspirations rather than their problems. An example from a village in Guatemala will help make the point. The poorest families of the village were the hardest hit by malnutrition and the death of children. A project initially dealing solely with malnutrition failed in part because it accentuated the parents' feeling of failure. Reorienting the project's objectives around a pre-school with a link to nutrition rescued the project because it sent to the parents a strong message that others had, like themselves, faith in the future of their children.
- Recognising the value of cultural actions: Human beings require beauty and creative expression as much as they require food, clothing and shelter. Artistic and cultural projects

emphasise each person's natural creativity. Through them, the poorest may be able to discover their capabilities and potential. They may gain the confidence necessary to dare speaking up and contributing to the well-being of their communities and to broader society. Cultural activities may also provide an atmosphere allowing people from different backgrounds, poor and non-poor, to express and share experiences as equals.

- Strengthening the family: Threats to family life are to be taken seriously because the family is the first line of resistance of the poorest to deprivation and social exclusion. While extreme poverty is destructive to family as well as to social life, a poor person's family nevertheless remains a powerful means of personal and social identification. Because human beings tend to care first and foremost for the development of those closest to them, family life is also important for the poor to be able to assume their responsibilities (and to show to society that they can do so). Hence a basic question to be put forth when evaluating programs is whether this or that particular action reinforcing the family or breaking it apart.
- Providing a role for the poor in identifying others poorer than themselves: People living in precarious conditions are well aware of the existence of others, around them, who are poorer than themselves. They can lead outsiders to the most hidden and most downtrodden families. They can act as a the bridge that will build confidence and trust, leading to mutual respect and partnership. This role for the poor is unique, and it constitutes a key element in the development of actions aimed at reaching the poorest.
- Building on the potential for communities to unite around the poorest: Within each community, there are people who consistently express their solidarity with the poorest. These people are not necessarily leaders, but they are essential in establishing a consensus within a community to help those who are left out. They are also indispensable actors in the development of specific programs. One project with children living in the street in Ouagadougou, Burkina Faso, illustrates the role of those who already have relationships with the children. Rather than helping the children, the staff of the project asked them to whom they could rely for help. This led the staff to uncover an existing network of support upon which they later built their own project. Such existing networks of solidarity should be sought before starting new projects because they constitute a strength on which to build.
- Committing extra resources and time: Overall, Redegeld makes it clear that reaching the poorest requires a long-term commitment. Building trust and confidence takes times, and this must be recognised by development institutions because it implies that extra resources must be made available. Therefore, the dialogue between local organisations already involved with the very poor on one side, and development institutions and government agencies must make it clear from the beginning that partnering with the poorest does not mean entering into a short term collaboration. Moreover, Redegeld notes that reaching the poorest requires a significant human investment not only from outsiders, but also from the poorest. In the same way that outsiders require training, so do the poorest. If the poorest are to have an important role, they must not only be reached, but also empowered. Finally, beyond time and financial resources, flexibility and the ability to question one's own actions, values, and knowledge are important. Hence project evaluations should be anchored not only in traditional quantitative measures of success, but also in more difficult questions to answer, such as: "Did the poorest have through this project an opportunity to gain in autonomy and freedom?" All these issues have not been dealt with so far in this report, but the following sections in this chapter are an effort to provide some indications as to what has been and can be learned in these areas, relying for the most part on poverty assessments.

Box 6.1: Poverty Research: Alternative Methods

This report uses quantitative and positive, as opposed to qualitative and normative research methods. Two other recent studies rely on qualitative and/or normative approaches. Both studies are part of the background work for the World Bank's World Development Report 2001 devoted to poverty. These studies offer a useful complement to the results provided in this report.

Consultations with the poor: This study is the result of a global effort to listen to what the poor have to say about their condition and the policies that could be implemented to help them emerge from poverty (Narayan et al., 1999a). Focus groups and other participatory research methods were used in 23 countries, including LAC countries: Argentina (Cichero, Feliu, and Mauro, 1999), Bolivia (Dick, 1999), Brazil (Melo, 1999), Ecuador (Flores, 1999), and Jamaica (Grant and Shilitto, 1999). In addition, the study reviewed the findings of the participatory poverty assessments completed at the World Bank since the early 1990s. The wide range of the topics covered in this study makes it difficult to summarize its conclusions in a few words, but a few findings stand out. The poor place a strong emphasis on employment (having a good job in order to be independent) and basic infrastructure services. Education and health services are not emphasized as much, perhaps because they cannot deal with immediate needs (but other studies have shown that the poor do consider education and health services very important to help their children emerge from poverty). Finding a solution to violence, including violence within the household, also emerges as a priority for LAC. Finally, government agencies are not seen by the poor as being very responsive to their needs. NGOs and churches score better.

Extreme poverty and human rights: This study is devoted to the experience and thinking of Joseph Wresinski (1917–88), the man at the origin of the United Nations' World Day for Overcoming Poverty and of a number of resolutions adopted by the United Nations on the relationship between extreme poverty and human rights. The study combines qualitative and normative research methods. Some of its key propositions are as follows (Wodon, 2000b):

1. Extreme poverty results from a lack of basic securities in many areas (financial resources, education, employment, housing, health care, participation in civil society, etc). Beyond some threshold, the insecurity endured by the poorest is such that the lack of basic securities have mutually reinforcing impacts and lead to deprivations in new areas of life. The poorest are then prisoners of a vicious circle. With no basic security left as a solid foundation to rely upon, they cannot emerge from chronic poverty by themselves, without the help of others.
2. Apart from the plurality in areas of life affected by their lack of basic securities, the very poor share a history of deprivation and exclusion. The very poor suffer from a high degree of economic and social isolation which can be transmitted from one generation to the next.
3. Extreme poverty can lead to a violation of human rights in their indivisibility. First, for each right, the link between the right and the corresponding responsibility is broken when due to a lack of access to the right, the very poor cannot fulfill their responsibility. Conversely, unable to fulfill their responsibility, the poor cannot claim their right. Second, the experience of the poor challenges the dichotomy between civil and political rights, and economic, social, and cultural rights. A coordinated action on all fronts is required if policy makers are to help the very poor emerge from extreme poverty. Moreover, the human rights framework can help to go beyond social justice in building a normative justification for poverty reduction.

Poverty Assessments Highlight the Need to Make Institutions More Pro-poor[1]

The forthcoming World Development Report on poverty will emphasize the need to empower the poor in part by making state institutions pro-poor. *The World Bank's 2000–01* World Development Report emphasizes empowerment of the poor as a condition for poverty reduction. The report discusses the importance of good governance and the rule of law, democracy, decentralization, and the political economy of poverty. It also calls attention on the role that social networks and social capital can play in empowering the poor. While these topics have not yet received the level of attention that they deserve, they have been discussed to some extent in past poverty assessments conducted by the World Bank in the LAC region.[2]

The incidence of education spending is not pro-poor due to the lack of participation of the poor to secondary and higher levels of schooling. Many poverty assessments devote considerable attention to the incidence of public expenditures on education. According to these assessments, the only level at which the attendance differentials between the poor and the non-poor do not appear substantial is in primary education. The data from the surveys analyzed for this report confirm the lack of access of the poor to education services. Table 6.2 provides the ratios of the shares of school enrollment (in both public and private schools) and per capita income at various age levels for the ninth income decile as compared to the first income decile (i.e., the poorest) for selected countries. In Paraguay for example, children aged 6–12 (respectively 18–22) living among households whose per capita income is in the ninth decile have a probability of going to primary school 1.16 (respectively 3.21) times larger than the probability of enrollment for children aged 6–12 (respectively 18–22) but living in households from the poorest decile. This shows how inequality in school enrollment increases as children get older and schooling levels rise. On average, across the countries reviewed in Table 6.2, poor children aged 6–12 are almost as likely to be enrolled than rich children of the same age, but poor youth are two to three times less likely to be enrolled than non-poor youth (poor youth are also likely to be enrolled at lower levels of schooling, but this is not shown in the Table). Still, schooling is distributed more equitably than income, since across all age groups in Table 6.2, per capita income in the ninth decile is about 25 times higher than in the poorest decile.

[1] As noted in chapter 1, poverty assessments have been completed in Argentina (World Bank, 1995a, 1999c), Bolivia (World Bank, 1996a), Brazil (World Bank, 1995b), Caribbean countries (World Bank, 1996b), Chile (World Bank, 1997a), Columbia (World Bank, 1994a), Costa Rica (World Bank, 1997b), the Dominican Republic (World Bank, 1995c), Ecuador (World Bank, 1995d), El Salvador (1994b), Guatemala (World Bank, 1995e), Guyana (World Bank, 1994c), Haiti (World Bank, 1998a), Honduras (World Bank, 1994d), Jamaica (World Bank, 1994e), Mexico (World Bank, 1999a), Nicaragua (World Bank, 1995f), Panama (World Bank, 1999b), Peru (World Bank, 1998b), Trinidad and Tobago (1995g), Uruguay (World Bank, 1993), and Venezuela (World Bank, 1991).

[2] While this section reviews mainly what has been said in World Bank LAC poverty assessments on the access of the poor to state institutions for education, health, and basic social infrastructure (via social funds), there are a number of other documents published by the World Bank which deal with issues of participation and empowerment. See for example Ayerigg (1998), Booth et al. (1998), Cernea (1992), Fox and Aranda (1994), and Malena (1997). See also the review of participatory poverty assessments mentioned by Narayan et al. (1999b).

BEST COPY AVAILABLE

Table 6.2: "90/10" Ratios for Enrollment Shares and Per Capita Income Shares by Age Group, 1995

	6–12 years		12–15 years		15–18 years		18–22 years	
	Enrollment	Income	Enrollment	Income	Enrollment	Income	Enrollment	Income
Argentina	0.92	47.71	1.14	117.00	1.49	42.58	1.54	25.24
Brazil NC	1.33	22.01	1.71	20.83	2.93	21.80	4.08	27.06
Brazil NE	0.94	12.86	0.95	11.34	0.74	7.83	0.85	8.70
Brazil S	1.26	21.75	1.35	18.26	1.68	21.49	2.57	28.34
Brazil SE	0.88	18.36	1.03	15.49	1.69	17.17	2.27	19.49
Colombia	0.89	8.18	1.20	6.99	3.26	7.40	6.55	6.68
Ecuador	1.41	30.50	1.39	25.19	2.23	34.07	2.67	42.14
Mexico	1.44	52.94	1.40	32.43	1.34	35.28	1.91	29.51
Paraguay	1.16	20.44	1.39	20.29	3.43	29.12	3.31	23.81
Mean	1.14	26.08	1.28	29.76	2.09	24.08	2.86	23.44

Source: Own estimates.

To improve access to schooling for the poor, public expenditures on education could be redistributed from the tertiary to lower levels according to many poverty assessments. According to the poverty assessments, this could be done by encouraging cost-recovery at the tertiary level and increasing the demand for primary and secondary education among the poor by reducing the cost of schooling. In the Ecuador assessment, it is argued that requiring mostly non-poor students at universities to cover half of their costs would raise enough revenues to increase funding for primary education by 40 percent, and for secondary education by 35 percent. The Argentina poverty assessment also suggests cost recovery through tuition at public universities. In the Brazil assessment, it is suggested to reduce the direct cost of education for the poor by providing free school materials, uniforms, and transportation. Reductions in the opportunity cost of schooling can also be obtained by giving stipends to poor families provided they send their children to school. This is the case with Mexico's Progresa, Brazil's Bolsa Escola and Honduras' PRAF programs, for example. The Panama assessment echoes this approach in calling for attendance-based cash transfers and free textbooks and school materials.[3]

It may be necessary to go beyond the redistribution of educational expenditures towards primary and secondary education in order to target disadvantaged groups. These disadvantaged groups might include girls and indigenous children (which can be helped through bilingual education programs), at-risk youth such as male adolescents, and children living in extremely isolated or backward regions. References to these topics are largely fragmentary in the poverty assessments, but several hint at the policies and programs that might be of assistance (e.g., investing in primary education for indigenous children in the Bolivia and Mexico poverty assessments, or targeting scholarships for the rural poor in the Panama poverty assessment).

[3] An analysis of the marginal willingness to pay for education in Mexico (World Bank, forthcoming b) has shown that: i) the non-poor and those in urban areas get a large share of the subsidy or "savings" from the government provision of education services; ii) the valuation for private educational services is higher for the wealthy than for the poor; and, iii) quality differences are higher in the primary level. These results can be used to suggest that the government should i) better target public educational services; ii) charge a fee for public educational services to the non-poor; and iii) increase the quality of educational services in basic education.

Beyond access, the low quality of education services provided to the poor remains a concern. The quality of the education provided to the poor is judged by most poverty assessments to be markedly lower than that received by the non-poor (much of the rest of this section is based on Ayres, 1999). The non-poor frequently have recourse to private education in order to escape the deficiencies of the public school systems (including non-attendance of teachers at classes, lack of books and other curricular materials, dilapidated educational infrastructure, etc.). A prominent reflection of poor quality is the high dropout and repetition rates throughout the region. Virtually all assessments catalog these issues and problems. The Argentina assessment argues that the overriding educational problem now is not coverage, but lack of quality and efficiency in its educational system. In Brazil, only a little over a third of the children complete primary school. Only half of the children entering primary school ever reach the fourth grade. Deficiencies in the quality of education are considered by the assessment to be a major factor leading to this situation. Similarly, serious quality problems are noted in the assessment of Colombia, where the poor are the most seriously affected as revealed by national assessments of educational attainment. Low quality of schooling is also identified in the assessment of El Salvador as a major reason for the poor dropping out.

Both demand- and supply-side education policies must be balanced to obtain good results in education. The poverty assessments tend to suggest that demand-side considerations are more important than supply-side considerations in explaining low educational achievements, although this need not be the case in all countries. In the Panama assessment, lack of money was the single most common reason given for not enrolling in primary and secondary school, accounting for roughly one-half of absentees. This suggests that the direct costs (fees, materials, etc), of attending school are high for the poor. "Lack of interest" was cited as the second main impediment to enrollment for the poor, particularly at the secondary level, accounting for one-fifth of absentees. Disinterest is particularly high among poor urban boys. On the other hand, only four percent of poor non-enrollees at the secondary level and 18 percent at the primary level cited supply-side factors—such as distance to school, inadequate class space, and lack of facilities—as key obstacles to school attendance. The assessment of Colombia emphasizes both supply- and demand-side constraints. On the supply side, it is argued that the poor quality of primary school education discourages low-income children from pursuing secondary education. On the demand side, the direct and opportunity costs of secondary schooling are too high for the poor, particularly male students. The assessment of Brazil also discusses the factors accounting for the generally low demand of poor households for education services. In the Mexico assessment, both demand- and supply-side interventions are evaluated.

Improving the management of public education at the administrative level is also a priority. Some Ministries of education tend to be highly centralized, unresponsive to client concerns, poorly staffed, and averse to risks and innovation. These problems are extensively discussed in, for example, the assessment of Guatemala, in which inadequate educational planning, poor budgetary execution, overcentralization of the educational administration, and an inappropriate personnel profile and rigidities in the personnel structure are cited. The policy messages emanating from these commonly perceived problems in educational systems throughout the region are quite uniform across the various poverty assessments. Undertake reforms in the provision of education services, especially to the poor. While management reform in the public ministries of education is seen as a necessary requirement, not much attention is paid to the core reforms that might be needed within these bureaucratic structures themselves.

Decentralization and local school autonomy could lead to improvements in educational quality. In the Colombia assessment, decentralizing responsibility for primary and secondary education is seen as a potentially effective way to address many of the constraints. Efforts at giving provincial governments greater responsibility for improving educational quality are traced in the assessment of Argentina. In general however, the assessments do not offer judgments, probably because it was deemed premature to do so, about the effectiveness of these and other measures (voucher programs for the poor, for example) in improving the delivery of quality education services in the region. Other topics discussed in the assessments under the rubric of reforming educational service provision include encouraging community involvement in the management of schools at the local level (e.g., the Escuela Nueva in Colombia) and the role that non-governmental organizations can play, a factor emphasized in the Haiti assessment.

Apart from poverty assessments, other studies such as the evaluation of Nicaragua's School Reform suggest that autonomy at the school level may be beneficial. The Government of Nicaragua started to decentralize school management in 1991. Next, as of 1993, first on a pilot basis but later on a large scale, the government gave the school management boards more authority to act on personnel, budgets, curriculum, and pedagogy matters. With universal school autonomy as a goal, the reform is expected to boost participation at the local level, so that the schools are more responsive to the needs of the children and the requests of their parents. A combined quantitative and qualitative evaluation of the impact of decentralization was conducted jointly by the World Bank and the Ministry of Education. The qualitative evaluation used data from 12 schools (9 decentralized and 3 not), while the quantitative study covered 242 primary and secondary schools (about two thirds decentralized and one third not). The results are discussed in Fuller and Rivarola (1998), King and Ozler (1998), and King, Ozler, and Rawlings (1999). The regression results for the quantitative study suggest that while the granting of school autonomy per se (autonomy de jure) does not increase student achievement, those schools that did actually use their autonomy in making a larger share of their decisions at the local level (autonomy de facto) did make progress. In these schools, decentralization had more of an impact on student achievements than traditional variables such as teacher training, teacher-pupil ratios, and the availability of textbooks. But the results of the qualitative study suggested that achieving autonomy was difficult for the poorest communities.

Making state institutions more pro-poor is also needed in the health sector. The poor rely on public health services which are not always available, especially in rural areas. In contrast, the non-poor have access to health care from private sources. As was the case for education, these generalizations are found in virtually all poverty assessments. According to the Bolivia poverty assessment for example, only about two-thirds of urban households and one-half of rural households have access to formal health care services. The poor constitute the bulk of those lacking such access. In Colombia, among the poorest 10 percent of the population, 36 percent of individuals in need of medical assistance did not attend a health center because it was too expensive or too far from their home. In Costa Rica, many remote areas lack health facilities, with over one-third of the rural population not covered. In Ecuador, twice as many poor than non-poor say that they are not able to afford necessary treatment or medicine. More than 70 percent of births in rural areas took place without professional help in 1992. These patterns are by and large repeated in all the countries, for which poverty assessments were reviewed, albeit in varying degrees.

In many cases, public expenditures are better distributed for health than for education. In Bolivia, the poverty assessment mentions that 60 percent of the public expenditures on health care benefit the poor. The expenditures of the public health service in Colombia also appear to be distributed progressively, in the sense that the lowest income quintile receives 27.4 percent of the subsidies and the highest quintile only 12.5 percent. Expenditures for public hospitals are considered strongly progressive by the Argentina poverty assessment, but this overlooks problems of inefficiency and quality. The public expenditures of the Ministry of Health in Ecuador also tend to benefit the poor, with about 40 percent of the resources going to the 35 percent of the population that is poor, whereas the wealthiest quintile gets only 11 percent of expenditures.

There are however countries in which health expenditures are unequally distributed. In some countries, the incidence of public expenditures on health care diverges from the patterns just reported: it is found to be largely regressive. The Guatemala assessment is unequivocal in this regard. It argues that health care expenditures are skewed toward urban areas and away from poor individuals. The greater the degree of urbanization, the greater the health care resources spent on that area. Those areas with the greatest poverty receive the least Ministry of Health expenditures per capita, according to the assessment. In Panama, the poorest and richest quintiles benefit the least from public spending on health care—but for vastly different reasons. For those in the top quintile, this is due to reliance on private health care. For the poorest, however, this bias reflects low levels of health care use in general, regardless of the type of care.

As for education, there is substantial documentation in poverty assessments for the lack of quality in health care services for the poor. While the incidence of public health expenditures appears pro-poor in many countries, there are problems of quality, especially in rural areas. In Haiti, the physical infrastructure is largely run-down, and shortages of essential drugs, equipment and materials hamper the provision of services. The assessment of Colombia identifies a long list of factors impeding the delivery of quality health care to the poor. The assessment of Panama also catalogs the factors that contribute to the poor quality of health care. The report concludes that while these issues are not limited to the poor, it is the poor who suffer the most in terms of outcomes. Poor quality and related issues of inefficiency are also identified as the key issues confronting the health sector in Trinidad and Tobago. In the public sector, many of the health centers are poorly staffed or under-staffed and hospitals have inadequate support services. One consequence is that an estimated 50 percent of the population, including large numbers of the poor, bypass the public system and pay to see private physicians. In Ecuador as well, many poor people have recourse to the private sector for professional health services (42.5 percent of the poor versus 57.9 percent of the non poor). This can be a substantial financial burden on the poor. Innovations in service delivery will be needed to improve quality. As in education, the decentralization of service provision and the building of local management capacity are seen as promising. Another tendency identified in the poverty assessments is the introduction of greater competition among service providers. In moving toward competition, however, care must be exercised to protect the interests of the poor. Private provision, or joint public-private provision of health care must not price the poor out of the system.

There is not enough emphasis on preventive, as opposed to curative care. Most countries in the region spend far more on expensive curative, hospital-based care than on preventive, outpatient care. This is a disadvantage for the poor, especially in rural areas. Perhaps the most

obvious example is Argentina, where health care has traditionally been strongly oriented toward curative medical attention and most service provision has taken place in hospitals. Preventive coverage has been generally low. But Argentina is far from the only example. The poverty assessment of Guatemala reports that in 1990 the operating expenses of the two largest hospitals in the metropolitan area of Guatemala City exceeded the operating expenses of all health posts and clinics in the country. Health care spending on curative care is determined to be regressive in Panama. From the standpoint of a concern with poverty reduction, following the arguments made in the 1993 World Development Report on health, many assessments emphasize the need for the development of a package of basic, mainly preventive health services that would be accessible to and affordable by the poor. The feasibility of implementing such a basic package depends on the scope for reallocating public resources.

Again, as for education, improving the management of public health services should be a priority. Incentive structures work against the provision of many services to the poor, vested interests (e.g., of doctors and nurses) impede many reforms, and there are numerous instances of overstaffing and attendant inefficiencies. The need for a rationalization of health sector financing is discussed in a number of the assessments. This is only partly a matter of the potential for the reallocation of public expenditures. In many countries it has also to do with the reform of social security systems, which have been important providers of health care services. An important issue is the scope for structuring social security reform in such a way that it can incorporate the interests of the poor, for example, those in rural areas and in the informal sector. The development of private health insurance systems receives attention along several dimensions, including its potential affordability (or lack thereof) by the poor. The public health bureaucracy needs to be reformed along lines that would streamline it and increase its internal efficiency. The tendency in the assessments is to give greater emphasis to the future role of ministries of health as standard-setters, rule-makers, and regulators rather than as direct providers of services, with notable exceptions such as the potential provision of the basic package of health services to the poor discussed above.

Some Social Funds Have Managed to be Responsive to the Needs of the Poor

Social investment funds were originally a response to the social aspects of adjustment programs, but their focus has changed over time towards providing basic infrastructure. The first social investment fund was established in Bolivia (Jorgensen, Grosh, and Shacter, 1992). Since then, the experience has been generalized in many LAC countries. Originally, social funds were designed primarily to provide employment. Yet almost all funds now have evolved into programs designed to provide small scale social infrastructure, particularly in rural and poor areas, using projects generated and executed at the local level. Most social funds are agencies independent of line ministries, often attached to the office of the country's president, which reviews and funds projects submitted by NGOs, local governments and other sponsoring agents. Their strong points include local community involvement and the ability to respond to local perceptions of needs, especially in rural areas where normal government expenditures often do not reach the poor. Social funds also often have an ability to avoid corruption and "make work" projects. But they are not very good at providing safety nets, and nowadays they do not normally expand during a crisis to provide more employment. In fact, the amount of employment and income generation provided by social funds has historically been low. Social funds are better at improving the supply of health, education, and basic infrastructure services,

with in some cases impacts on outcomes such as school enrollment rates, age-for-grade, or the incidence of illnesses (for a review of social funds, see e.g., Goodman et al., 1997)..

The allocation of the funds at the local level takes into account the deprivation of the communities as well as local priorities in the selection of projects. Within the communities, the use of the funds is demand-driven in that the choice of the projects is made with popular participation. The social fund was judged to be reaching its targeted poor rural population in the Bolivia poverty assessment, although this judgment was based on a limited analysis of the geographical focus of the fund. Moreover, while various input measures showed positive trends (e.g., consultations at fund-supported health centers, attendance levels in fund-supported schools), outcome measures (e.g., improvements in measures of health status, reductions in school dropout rates) showed less improvement. In a more recent evaluation of the second installment of the fund, Pradhan, Rawlings, and Ridder (1998) find that targeting is deficient in part because of the ability of richer communities to organize themselves in order to benefit from the program. The incidence of health and sanitation projects is found to be regressive, and that of education projects to be neutral. In terms of impacts, the results are better than those reported in the poverty assessment. Education projects improve achievement (as measured by test scores) but not drop-outs, and health projects are found to reduce mortality.

Apart from Bolivia, several other LAC poverty assessments contain evaluations of social investment funds. Favorable judgments are reached on the poverty impact of the social investment fund in El Salvador, based in part on the fact that 58 percent of the beneficiaries (as of late 1993) were women and children and 65 percent of beneficiaries resided in rural areas (Ayres, 1999). The assessment points to positive features of social investment funds and similar programs: (a) an emphasis on rural areas, where the majority of the poor live; (b) a demand-driven orientation, such that the projects are in tune with local needs and allow experimentation with new ideas; and (c) a separation between financing and implementation entities, i.e., local bodies, non-governmental organizations, and private contractors. Several other assessments, notably those on Trinidad and Tobago and on the Caribbean countries, also devote some attention to the role that non-governmental organizations can play in the design, implementation, and, in some cases, financing of social funds. In Nicaragua, the presumption in the assessment of the Emergency Social Investment Fund is that it also benefits the poor, but this conclusion is tempered by the inadequacy of evaluation data. A key issue addressed by a number of the poverty assessments concerns the relationship of social investment funds to the regular line agencies of government, such as the Ministries of education and health. The funds have tended to take on a permanent life of their own, leading at times to problems of coordination of the various safety net programs designed to reach the poor at the country level. At the same time, one of the strengths of social funds is precisely that they have strong organizations that exist with relatively good systems for project management and monitoring. These organizations can also be used in times of crisis for the delivery of safety nets. The existing social fund in Honduras has proven highly valuable in directing emergency assistance to local villages after Hurricane Mitch.

A recent evaluation of the Honduran social investment fund suggests positive impacts. The Honduran Social Investment Fund (FHIS) was established in 1990 to improve the living conditions of marginal social groups in both rural and urban areas by financing small-scale social and economic development projects. Since its inception, the FHIS has implemented more than

8,000 of projects in Honduras, mainly in the following areas: preschools and primary schools, water and sanitation, health posts and latrines. An evaluation of the FHIS has been completed by ESA Consultores (1999) using a household survey carried in the summer of 1998. According to this evaluation, several of the projects funded by the FHIS had positive impacts on education and health indicators, although more in-depth research is needed to confirm these findings. As to the targeting performance of the FHIS, it was better at the household than at the municipal level. There was progressivity in that the lowest decile had a higher share of FHIS benefits in most project categories. Interestingly, there was also some degree of self-selection at work since the distribution of FHIS resources was more progressive for actual beneficiaries than for potential beneficiaries living in the projects' geographic areas. This indicates that a number of FHIS projects tend to be more in demand among poor segments of the population.

Another study for the Honduras social fund suggests that consultation prior to project implementation is likely to increase the use of the facilities financed by the fund. The study analyzed whether the households who were consulted about the social fund projects prior to their implementation in the community were more likely to contribute to this implementation (by contributing in kind or in cash to the implementation) and to use the facilities once they have been installed. Using an instrumental variable to control for the endogeneity of some of the variables (Box 6.1), the study found that consultation before the implementation increased the probability of participation (i.e., contribution, with the impact depending on the type of project considered (i.e., education, health, water, and toilets). In turn, participation in the implementation increased the use of the facilities once completed. These results suggest that consultation of the potential beneficiaries of a project may improve outcomes, since outcomes (such as an increase in school enrollment or a decrease in the incidence of illnesses) depend on the usage of the facilities provided.

At the same time, while a number of social funds are clearly responsive to local needs, they have not necessarily been well targeted to the poor. This is a difficult issue because improving the targeting of social investment funds is complex due to the many actors involved. Holding constant the distribution of household level participation within beneficiary municipalities for any given type of investment project, the targeting performance of the social investment funds depends on municipal level targeting which results from a process involving both the central government and the municipality. The decisions by the center relate to the total available resources for each municipality, while the decisions made by the municipality relate to the use of the resources. Both decisions affect the final distribution of the benefits. In terms of the decisions by the center, while all municipalities may be eligible for participation, it is important to have an allocation per capita at the municipal level based at least in part on a formula taking into account poverty and/or unmet basic needs. In so doing, some consideration may have to be paid to the political economy constraints for targeting and the goals of social funds not directly related to poverty, such as the impact that the funds may have in building local capacity in a context of municipal decentralization. The decisions made at the municipal level are also complex, because they result from a bargaining process between different population groups which may not have identical preferences and priorities. One way to influence the final allocation of the benefits so that it is pro-poor is to set guidelines as to how part of the funds available at the local level may be spent, in order to favor areas where the poor have more needs.

BOX 6.2: DOES CONSULTATION IMPROVE PARTICIPATION AND USAGE IN SOCIAL FUNDS?

Wodon, Hall, and Rawlings (2000) conduct a qualitative and quantitative assessment of community participation in the Honduras social investment fund. For the quantitative part, they test whether the consultation of project beneficiaries increases their participation in the implementation of the projects, and their use of the facilities once the implementation has been completed. Denote the consultation of household i living in area j by the latent variable CON^*_{ij}. Only a categorical variable is observed, CON_{ij}. Consultation depends on a vector of household characteristics X_i (including a constant). It also depends on a vector of geographic variables Z_j. Finally, it depends on a variable identifying the promoter of the project. The promoter can be the social fund, another organization, or an organization unknown to the household. They include two dummies for the project promoter, representing the social fund (FHIS) and unknown promoters. They estimate:

$$CON^*_{ij} = \gamma_{con}'X_{ij} + \delta_{con}'Z_j + \alpha_{con}FHIS^*_{ij} + \beta_{con}UNKNOWN^*_{ij} + \varepsilon_{conij}$$
$$CON_{ij} = 1 \text{ if } CON^*_{ij} > 0 \text{ and } CON_{ij} = 0 \text{ if } CON^*_{ij} \leq 0$$

Next, they model participation, denoted by PAR^*_{ij}. They assume that consultation affects positively participation. However, one cannot simply estimate a model where consultation is considered as exogenous variables, because of the expectations of households. Households may make special efforts to be consulted, or to attend consultation meetings, if they expect that they will participate in the project (and/or use the facilities). If one wants to assess the impact of consultation on participation without bias, one needs to find an instrumental variable which determines consultation, but not participation conditional on consultation. They construct such a variable by taking as an additional determinant of consultation at the household level the rate of consultation among all the other households in the project area. That is, if N_j is the number of households in community j, they compute a rate of consultation among all other households for each household $RCON_{ij} = (\Sigma_{k\neq i,\ k\in j} CON_{ij})/(N_j - 1)$. With this additional variable, they estimate the following probit for consultation:

$$CON^*_{ij} = \gamma_{con}'X_{ij} + \delta_{con}'Z_j + \alpha_{con}FHIS^*_{ij} + \beta_{con}UNKNOWN^*_{ij} + \lambda RCON_{ij} + \varepsilon_{conij}$$
$$CON_{ij} = 1 \text{ if } CON^*_{ij} > 0 \text{ and } CON_{ij} = 0 \text{ if } CON^*_{ij} \leq 0$$

Next they use the index function from the probit, that is the right hand side of the above equation less the error term, denoted by $CONH_{ij}$ as the predicted value for CON^*_{ij} in the following probit:

$$PAR^*_{ij} = \gamma_{con}'X_{ij} + \delta_{con}'Z_j + \alpha_{con}FHIS^*_{ij} + \beta_{con}UNKNOWN^*_{ij} + \lambda_{con}CONH_{ij} + \varepsilon_{conij}$$
$$PAR_{ij} = 1 \text{ if } PAR^*_{ij} > 0 \text{ and } PAR_{ij} = 0 \text{ if } PAR^*_{ij} \leq 0$$

The parameter λ_{con} is the estimate of the impact of consultation on participation. The final step is to model usage. Again, consultation and participation are endogenous, since households are more likely, for example, to participate if they expect to use the facilities. They follow the same procedure for participation, in constructing a participation rate in the project area for all households but the one considered, denoted by $RPAR_{ij} = (\Sigma_{k\neq i,\ k\in j} PAR_{ij})/(N_j - 1)$. They obtain the expected participation rate at the household level by running a first stage regression, and denoting the index value for participation by $PARH_{ij}$, they then estimate:

$$USE^*_{ij} = \gamma_{use}'X_{ij} + \delta_{use}'Z_j + \alpha_{use}FHIS^*_{ij} + \beta_{use}UNKNOWN^*_{ij} + \lambda_{use}CONH_{ij} + \theta_{use}PARH_{ij} + \varepsilon_{useij}$$
$$USE_{ij} = 1 \text{ if } USE^*_{ij} > 0 \text{ and } USE_{ij} = 0 \text{ if } USE^*_{ij} \leq 0$$

They find that the impact of consultation and participation on usage is positive, although much lower than would have been estimated without controling for the endogeneity of these variables.

Issues Related to Empowerment Also Include Social Capital and Exclusion

Recent development thought has emphasized the importance of social capital. As noted by Cord, Gacitua-Mario, and Wodon (1999), Putman (1993) views social capital as a network of horizontal relations and associated norms that permit the undertaking of collective activities. Essential in this perspective is the mutual confidence or trust and the conviction that for achieving certain objectives collective action is better than individual action. Social capital facilitates cooperation between members of a group aiming to achieve objectives that could not be attained individually. Thereby, social capital may improve economic productivity. Social capital involves institutions and organizations. Institutions are procedures and norms that regulate how processes are carried out and how the roles of the different actors are distributed. Organizations are structures such as executive organs and operational mechanisms and relationships between individuals and groups. For others, social capital also involves horizontal and vertical social structures that link local organizations to broader social groups, as well as the "social and political environment that enables norms to develop and shapes social structure" (Serageldin and Grootaert, 1997). Here social capital can be seen as the social institutions and networks that allow communication and the mobilization of economic, politic, social and cultural resources. Social capital facilitates a common conceptualization which permits the undertaking of collective action and makes the expected benefits and costs for each actor to depend on the actions of others. This helps individuals and communities to adapt.

There are indications that higher levels of social capital in rural areas improve well-being, but questions remain as to causes and effects. While the synergy between social institutions, public institutions and the market is seen as a key element for sustainable development (Evans 1997), the empirical work for assessing the impact of social capital on well-being is still in its infancy. A few case studies have suggested that social capital has an impact on economic development when local institutions and organizations act as facilitators of collective action and cooperation (Putman 1993; Ostrom 1997; Narayan and Pritchett, 1997). A dynamic network of organizations and institutions helps in reducing transaction costs and improving community welfare. Some econometric work also suggests that social capital has a direct effect on individual or household welfare by raising income levels and reducing poverty. While this has been observed by Narayan and Pritchett (1997) in rural Tanzania and by Cord and Wodon (1999) and Lanjouw (1998) in rural Mexico, more research is needed to disentangle the complex causes and effects at work in the relationship between social capital and well-being.

There is also limited evidence that indigenous populations are poorer and not benefiting as much as other populations from government programs. One topic which deserves additional work is the relationship between indigenous populations and poverty. In many LAC countries, poverty is more prevalent among the indigenous population than among the non-indigenous population (Psacharopoulos and Patrinos, 1996), but it is unclear whether this is due to the fact of being indigenous, or to lower endowments among indigenous populations. Using data from Bolivia, Jimenez and Wodon (2000) find that controlling for other variables, being indigenous increases the probability of being poor. The same finding is obtained for Mexico by Wodon and Molnar (1999) in rural areas. Wodon and Molnar also show how rural indigenous populations may not be as well informed as other populations about government programs, which would limit their ability to use these programs in order to emerge from poverty.

REFERENCES

ACC/SCN (Administrative Committee on Coordination, Sub-Committee on Nutrition). 1997. *Third Report on the World Nutrition Situation.* Geneva: World Health Organization.

Ahumada, H., A. Canavese, P. Sanguinetti, and W. S. Escudero. 1993. "Efectos distributivos de impuesto inflacionario." *Anales de la Asociacion Argentina de Economia-Politica* 2 Universidad nacional de Tucuman.

Alesina, A., and D. Rodrik. 1994. "Distributive Politics and Economic Growth." *Quarterly Journal of Economics* 108: 465–90.

Anand, S., and R. Kanbur. 1993. "The Kuznets Process and the Inequality-Development Relationship." *Journal of Development Economics* 40:25–52.

Aronson, R. 1991. *Self-Employment: A Labor Market Perspective,* Cornell Studies in Industrial and Labor Relations, Number 24. Ithaca : ILR press.

Arriagada, A.-M. 1999. Managing Social Risk in Argentina." Word processed. World Bank, Washington, D.C.

Atkinson, A. B. 1979. "Horizontal Equity and the Distribution of the Tax Burden." In H. J. Aaron and M. J. Boskin, eds., *The Economics of Taxation.* Washington D.C.: Brookings Institution.

Atkinson, A. B. 1983. "The Measurement of Economic Mobility." In *Social Justice and Public Policy.* Sussex: Wheatsheaf Books Ltd.

Atkinson, A. B., and F. Bourguignon. 1992. *Empirical Studies of Earnings Mobility.* Harwood, Chur.

Aycrigg, M. 1998. *Participation and the World Bank: Successes, Constraints, and Responses.* Social Development Papers No. 29. Washington, D.C.: World Bank.

Ayres, R. 1999. "Background Notes for a Review of World Bank Poverty Assessments in Latin America and the Caribbean." Word processed. World Bank, Washington, D.C.

Baker, J. 2000. "Evaluating Project Impact for Poverty Reduction: A Handbook for Practitioners." Word processed. World Bank, Washington, D.C.

Baker, J., and M. E. Grosch. 1994. "Poverty Reduction Through Geographic Targeting: How Well Does It Work." *World Development* 22: 983–95.

Basu, K. 1999. "Child Labor: Cause, Consequence, and Cure, with Remarks on International Labor Standards." *Journal of Economic Literature* 37:1083–1119.

Basu, K., and P. H. Van. 1998. "The Economics of Child Labor." *American Economic Review* 88: 412–27.

Besley, T. 1995. "Savings, Credit and Insurance." In J. Behrman and T.N. Srinivasan, eds., *Handbook of Development Economics*, Vol. 3. Amsterdam: North-Holland.

Besley, T., and R. Kanbur. 1988. "Food Subsidies and Poverty Alleviation." *Economic Journal* 98:701–19.

———. 1993. "The Principles of Targeting." In M. Lipton and J. Van der Gaag, eds. *Including the Poor*. Washington, D.C.: World Bank.

Bibby, J. 1975. "Methods of Measuring Mobility." *Quality and Quantity* 9:107–36.

Booth, D., J. Holland, J. Hentschel, P. Lanjouw, and A. Herbert. 1998. "Participation and Combined Methods in African Poverty Assessments: Renewing the Agenda." Social Development Division, Africa Division, World Bank, Washington, D.C.

Bossio Rotondo, J. C. 1996. "La OIT y el Trabajo Infantil: Una Perspectiva Latino-Americana." In A. Brizzio de la Hoz, ed., *El Trabajo Infantil en Mexico*. Mexico City: Organizacion Internacional del Trabajo, UNICEF, and Universidad Veracruzana. .

Borjas, G. J., and S. G. Bronars. 1989. "Consumer Discrimination and Self-Employment." *Journal of Political Economy* 97:581–605.

Brizzio de la Hoz, A., ed. 1996. *El Trabajo Infantil in Mexico*. Mexico City: Organizacion Internacional del Trabajo, UNICEF, and Universidad Veracruzana. .

Bruno, M., M. Ravallion, and L. Squire. 1996. "Equity and Growth in Developing Countries." Policy Research Working Paper 1563. World Bank, Washington, D.C.

Carter, M., and P. Olinto. 1996. "Getting Institutions Right for Whom? The Wealth Differentiated Impact of Property Rights Reform on Investment in Rural Paraguay." Word processed. World Bank, Washington, D.C.

Cartwright, K., 1998. "Child Labor in Colombia." In C. Grootaert and H.A. Patrinos, eds. *The Policy Analysis of Child Labor: A Comparative Study*. London: St Martin's Press.

CEPAL. 1996. *Panorama Social 1996 de America Latina*. Santiago, Chile: United Nations.

———. 1999. *Panorama Social 1998 de America Latina*. Santiago, Chile: United Nations.

Cernea, M. M. 1992. "The Building Blocks of Participation: Testing Bottom-Up Planning." World Bank Discussion Paper 166. World Bank, Washington, D.C.

Chant, S. 1999. "Population, Migration, Employment and Gender." In R. Gwynne and K. Cristobal, eds. *Latin America Tranformes: Globalization and Modernity*. London: Arnold Publishers.

Cichero D., P. Feliu, and M. Mauro. 1999. *Consultations with the Poor—National Synthesis Report. Argentina*. Washington, D.C.: World Bank.

Clarke, G. R. G. 1995. "More Evidence on Income Distribution and Growth." *Journal of Development Economics* 47: 403–28.

Comision para el Estudio de los Niños Callejeros. 1992. *Ciudad de Mexico: Estudio de los Niños Callejeros*. Mexico City.

Cord, L., and Q. Wodon. 1999. "Do Mexico's Agricultural Programs Alleviate Poverty? Evidence from the Ejido Sector." In World Bank, 1999a. *Government Programs and Poverty in Mexico*, Report 19214-ME. Washington, D.C.

Cord, L., E. Gracitua-Mario, and Q. Wodon. 1999. "Social Capital and Land Titling in Mexico's Ejido Sector." In World Bank, 1999a. *Government Programs and Poverty in Mexico*, Report 19214-ME. Washington, D.C.

Cornia, G. A., and F. Stewart. 1995. "Two Errors of Targeting." In D. Van de Walle and K. Nead, eds. *Public Spending and the Poor: Theory and Evidence*. Baltimore: John Hopkins University Press.

Cunningham, W. 1998. "Breadwinner versus Care Giver: Labor Force Participation and Sectoral Choice Over the Mexican Business Cycle." Word processed. World Bank, Washington, D.C.

Dall'Acqua, F. 1991. "Economic adjustment and nutrition policies: Evaluation of a school-lunch programme in Brazil." *Food and Nutrition Bulletin* 13: 202–9.

Dar, A., and I. S. Gill. 1998. "On Evaluating Retraining Programs in OECD Countries." *World Bank Research Observer* 13: 79–101.

Dardanoni, V. 1993. "Measurement of Social Mobility." *Journal of Economic Theory* 61:372–94.

Datt, G., and M. Ravallion. 1992. "Growth and Redistribution Components of Changes in Poverty Measures: A Decomposition with Applications to Brazil and India in the 1980's." *Journal of Development Economics* 38:275–95.

Deininger, K., and H. Binswanger. 1999. "The Evolution of the World Bank's Land Policy: Principles, Experiences, and Future Challenges." *World Bank Research Observer* 14:247–76.

De Janvry, A., and E. Sadoulet. 1999. "Growth, Poverty, and Inequality in Latin America: A Causal Analysis 1970–94." Word processed. Inter-American Development Bank, Washington, D.C.

Deutsch, R. 1998. "How Early Childhood Education Can Reduce Inequality: An Overview of Recent Findings." Word processed. Inter-American Development Bank, Washington, D.C.

Dick, F. 1999. *Consultado con los Pobres: Reporte de Sintesis Nacional—Bolivia*. Washington, D.C.: World Bank.

DIF (Sistema Nacional para el Desarollo Integral de la Familia). 1998. Algunas Consideraciones en Relacion a los Menores en Situacion de Calle. Mexico City.

———. 1999. El Fenomeno de los Menores Trabajadores Urbano Marginales, sus Principales Caracteristicas y Tendencias a Nivel Nacional: Informe Preliminar. Mexico City.

ESA Consultores. 1999. *Evaluación Ex-Post del Fondo Hondureño de Inversión Social (FHIS 2)*. Tegucigalpa.

Evans, D. S., and L. S. Leighton. 1989. Some Empirical Aspects of Entrepreneurship. *American Economic Review* 79:519–35.

Evans, P. 1997. *State-Society Synergy: Government and Social Capital in Development*. Research Series Number 24. Berkeley: University of California.

Ezemenari, K. 1997. "The Link between Public and Private Interhousehold Transfers: Implications for the Design of Safety Net Programs in Developing Countries." *American Journal of Agricultural Economics* 79: 666–71.

Feldstein, M. S. 1976. "On the Theory of Tax Reform." *Journal of Public Economics* 6:77–104.

Flores, A. M. 1999 *Consultations with the Poor in Ecuador—Final Report*. Washington, D.C.: World Bank.

Foster, J., J. Greer, and E. Thorbecke. 1984. "A Class of Decomposable Poverty Measures." *Econometrica* 52: 761–66.

Fox, J., and J. Aranda. 1994. "Community Participation in Mexico's Municipal Funds Program: The Case of Oaxaca." Workshop on Participatory Development. World Bank, Washington, D.C.

Fredland, J. E., and R. D. Little. 1981. "Self-Employed Workers: Returns to Education and Training." *Economics of Education Review* 1:315–37.

Fuller, B., and M. Rivarola. 1998. "Nicaragua's Experiment to Decentralize Schools: Views of Parents, Teachers, and Directors." Working Paper Series on Impact Evaluation of Education Reforms 5. World Bank, Washington, D.C.

Ganuza, E., L. Taylor, and S. Morely. 1998. *Politica Macroeconomica y Pobreza en America Latina y el Caribe*. Madrid: PNUD-Ediciones Mundi-Prensa.

Garner, T. I. 1993. "Consumer Expenditures and Inequality: An Analysis Based on Decomposition of the Gini Coefficient." *Review of Economics and Statistics* 75:134–38.

Gill, I. 1999. "Managing Socioeconomic Risks in Latin America and the Caribbean." Word processed. World Bank, Washington, D.C.

Glewwe, P., and G. Hall. 1998. "Are Some Groups More Vulnerable to Macroeconomic Shocks than Others? Hypothesis Tests Based on Panel Data from Peru." *Journal of Development Economics* 56:181–206.

Goodman, M., S. Morley, G. Siri, and E. Zuckerman. 1997. *Social Funds in Latin America: Past Performance and Future Role*. Washington, D.C.: Inter-American Development Bank.

Grant, J., and T. Shilito. 1999. *Consultations with the Poor—Country Report, Jamaica*. Washington, D.C.: World Bank.

Grootaert, C. 1998. "Child Labor in Cote d'Ivoire." In C. Grootaert and H.A. Patrinos, eds., *The Policy Analysis of Child Labor: A Comparative Study*. London: St Martin's Press.

Grootaert, C., and H.A. Patrinos, eds. 1998. *The Policy Analysis of Child Labor: A Comparative Study*. London: St Martin's Press.

Grosh, M. E. 1992. "Jamaican Food Stamps Programme: A Case Study in Targetting." *Food Policy* 17:23-40.

Grosh, M. E. 1994. *Administering Targeted Social Programs in Latin America: From Platitudes to Practice*. Washington, D.C.: World Bank.

———. 1995. "Five Criteria for Choosing among Poverty Programs." In N. Lustig, ed., *Coping with Austerity: Poverty and Inequality in Latin America*. Washington, D.C.: Brookings Institution.

Heil, M., and Q. Wodon. Forthcoming. "Future Inequality in Carbon Dioxide Emissions and the Projected Impact of Abatement Proposals.": *Environmental and Resource Economics*.

Hicks, N. 1991. "Expenditures Reductions in Developing Countries Revisited." *Journal of International Development* 3:29–37.

Hicks, N., and Q. Wodon. 2000. "Economic Shocks, Safety Nets, and Fiscal Constraints: Social Protection for the Poor in Latin America." In *CEPAL XII Seminario Regional de Politica Fiscal: Compendio de Documentos*. Santiago, Chile.

Holzmann, R., and S. Jorgensen. 1999. "Social Protection as Social Risk Management: Conceptual Underpinnings for the Social Protection Strategy Paper." Social Protection Discussion Paper 9904. World Bank, Washington, D.C. [CITED AS 1998 ON P. 89]

Holzmann, R., and T. Packard. 1999. "Extending Coverage in Multi-Pillar Pension Systems: Constraints and Hypotheses, Preliminary Evidence and Future Research Agenda." Word processed. World Bank, Washington, D.C.

Inter-American Development Bank. 1998. *Facing Up to Inequality in Latin America*. Baltimore, MD: Johns Hopkins University Press.

Ilahi, N., 1999, Children's Work and Schooling in Peru: Does Gender Matter?." Word processed.World Bank, Washington, D.C.

Jacoby, E., S. Cueto, and E. Politt. 1996. "Benefits of a School Breakfast Programme among Andean Children in Huaraz, Peru." *Food and Nutrition Bulletin* 17:54–63.

Jacoby, H. G., and E. Skoufias. 1997. "Risk, Financial Markets, and Human Capital in a Developing Country." *Review of Economic Studies* 64:311–35.

Jalan, J., and M. Ravallion. 1998. "Income Gains from Workfare and their Distribution: Estimates from Argentina's Trabajar Program." Word processed. World Bank, Washington, D.C.

Jimenez, W., and Q. Wodon. 2000. "Poverty in Bolivia: Trends and Determinants." Word processed. World Bank, Washington, D.C.

Jorgensen, S., M. Grosh, and M. Shacter. 1992. *Bolivia's Answer to Poverty, Economic Crisis and Adjustment: The Emergency Social Fund.* Washington, D.C.: World Bank.

Jovanovic, B. 1982. "Selection and Evolution of Industry." *Econometrica* 649–70.

Kakwani, N. 1993. "Poverty and Economic Growth with Application to Cote d'Ivoire." *Review of Income and Wealth* 39:121–39.

Kanbur, R. 1987. "Structural Adjustment, Macroeconomic Adjustment and Poverty: A Methodology for Analysis." *World Development.* 15:1515–26.

Khandker, S. R., and O. H. Chowdhury. 1996. "Targeted Credit Programs and Rural Poverty in Bangladesh." Discussion Paper 336. World Bank, Washington, D.C.

Khandker, S. R., B. Khalily, and Z. Khan. 1995. "Grameen Bank: Performance and Sustainability." Discussion Paper 306. World Bank, Washington, D.C.

King, E., and B. Ozler. 1998. "What's Decentralization Got to Do With Learning? The Case of Nicaragua's School Autonomy Reform." Working Paper Series on Impact Evaluation of Education Reforms 9. World Bank, Washington, D.C.

King E., B. Ozler, and L. Rawlings. 1999. "Nicaragua's School Autonomy Reform: Fact or Fiction." Word processed. World Bank, Washington, D.C.

Kuznets, S. 1955. "Economic Growth and Income Inequality." *American Economic Review* 45:1–28.

———. 1963. "Quantitative Aspects of Economic Growth of Nations: VIII. Distribution of Income by Size." *Economic Development and Cultural Change* 12:1–80.

Lam, D., and R. Schoeni. 1993. "Effects of Family Background on Earnings and Returns to Schooling: Evidence from Brazil." *Journal of Political Economy* 101:710–40.

Lanjouw, J. O., and P. Lanjouw. 1994. "Rural Nonfarm Employment: A Survey." Policy Research Working Paper 1463. World Bank, Washington, D.C.

Lanjouw, P. 1998. "Poverty and the Non-Farm Economy in Mexico's *Ejidos*: 1994–1997." In World Bank. *Mexico Ejido Reform: Avenues of Adjustment—Five Years Later.* Washington D.C.: World Bank.

Lazear, E. P., and R. L. Moore. 1984. "Incentives, Productivity, and Labor Contracts." *Quarterly Journal of Economics* 99:275–96.

Lerman, R. I., and S. Yitzhaki. 1985. "Income Inequality Effects by Income Sources: A New Approach and Applications to the U.S." *Review of Economics and Statistics* 67:151–56.

———. 1994. "Effect of Marginal Changes in Income Sources on U.S. Income Inequality." *Public Finance Quarterly* 22:403–17.

Levy, S., and E. R. Dávila. 1998. "Subsidios y Política Social." *Examen* 110:18–30.

Londono, J. L., and M. Szekely. 1997. "Persistent Poverty and Excess Inequality: Latin America, 1970–95." Working Paper Series 357. Inter-American Development Bank, Washington, D.C.

López, R. 1996. "Tenure Security and Investment in Honduras." Word processed. World Bank, Washington, D.C.

Lucas, R. E., Jr. 1978. "On the Size Distribution of Business Firms." *Bell Journal of Economics* 9:508–23.

Lustig, N., ed. 1995. *Coping with Austerity: Poverty and Inequality in Latin America.* Washington, D.C.: Brookings Institution.

———. 1999. "Crisis and the Poor: Socially Responsible Macroeconomics." Presidential address to LACEA, Santiago, Chile.

Malena, C. 1997. "NGO Involvement in World Bank–Financed Social Funds: Lessons Learned." Environment Department Paper 052. World Bank, Washington, D.C.

Maloney, W. 1999. "Does Informality Imply Segmentation in Urban Labor Markets? Evidence from Sectoral Transitions in Mexico. *World Bank Economic Review* 13:275–302.

———. 2000. "The Evaluation of Workfare and Conditional Transfer Programs as Emergency Measures, and a Modification to Trabajar." Word processed. World Bank, Washington, D.C.

Marcouiller, D., V. Ruiz del Castilla, and C. Woodruff. 1997. "Formal Measures of the Informal-Sector Wage Gap in Mexico, El Salvador and Peru." *Economic Development and Cultural Change* 45:367–92.

Mejia, J. A., and R. Vos. 1997. "Poverty in Latin America and the Caribbean: An Inventory, 1980–95." Working Paper Series I-4. Inter-American Development Bank, Washington, D.C.

Melo, M. 1999. *Consultations with the Poor—Brazil. National Synthesis Report*. Washington, D.C.: World Bank.

Ministerio de Trabajo y Promoción Social. 1998. *Estudio de Niños y Adolescentes Trabajadores a Nivel Nacional*. Lima, Peru.

Murdoch, J. 1997. "The Microfinance Revolution." Word processed. Harvard University, Cambridge.

Narayan, D., and L. Pritchett. 1997. "Cents and Sociability: Household Income and Social Capital in Rural Tanzania." Policy Research Working Paper 1796. World Bank, Washington, D.C.

Narayan, D., R. Chambers, M. Shah, and P. Petesch. 1999a. *Global Synthesis: Consultations with the Poor*. Washington, D.C.: World Bank.

Narayan, D., R. Patel, K. Schafft, A. Rademacher, and S. Koch-Schulte. 1999b. *Crumbling Foundations, Conflicting Relations: Gender, Institutions and Poverty*. Washington, D.C.: World Bank.

Norton, A., and T. Stephens. 1994. "Participation in Poverty Assessments." Workshop on Participatory Development. World Bank, Washington, D.C.

Ostrom, Elinor. 1997. "Crossing the Great Divide: Coproduction, Synergy, and Development." In Peter Evans, ed. *State-Society Synergy. Government and Social Capital in Development*. Research Series 24. Berkeley: University of California.

Panagides, A. 1994. "Mexico." In G. Psacharopoulos and H. A. Patrinos, eds. *Indigenous Peoples and Poverty in Latin America. An Empirical Analysis*. Washington, D.C.: World Bank.

Papanek, G., and O. Kyn, 1986. "The Effect on Income Distribution of Development, the Growth Rate and Economic Strategy." *Journal of Development Economics* 23:55–65.

Patrinos, H. A., and G. Psacharopoulos. 1997. "Family Size, Schooling, and Child Labor in Peru: An Empirical Analysis." *Journal of Population Economics* 10:337–86.

Persson, Torsten, and Guido Tabellini. 1994. "Is Inequality Harmful for Growth?" *American Economic Review* 84:600–21.

Phillips, M., G. Saenz, J. Fielder, B. Rogers, P. Tatian, T. Sanghvi, and J. Berhman. 1995. *The Costs and Cost-Effectiveness of School Feeding and School Bonos Programs in Honduras*. Report prepared for USAID under contract No. LAC-0657-C-00-0051.

Pitt, M., and S. Khandker. 1998. "The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter?" *Journal of Political Economy* 106:958–96.

Plotnick, R. 1981. "A Measure of Horizontal Inequity." *Review of Economics and Statistics* 63:283–87.

Pradhan, M., L. Rawlings, and G. Ridder. 1998. "The Bolivian Social Investment Fund: An Analysis of Baseline Data for Impact Evaluation." *World Bank Economic Review* 12:457–82.

Prais, S. J. 1955. "Measuring Social Mobility." *Journal of The Royal Statistical Society* A118:56–66.

Progresa. 1999. *Mas Oportunidades para las Familias Pobres*. Mexico City.

Psacharopoulos, G. 1997. "Child Labor Versus Educational Attainment: Some Evidence from Latin America." *Journal of Population Economics* 10:377–86.

Psacharopoulos, G., and H. A. Patrinos, eds. 1996. *Indigenous People and Poverty in Latin America*. Avebury: Aldershot.

Psacharopoulos, G., S. Morley, A. Fiszbein, H. Lee, and B. Wood. 1997. "Poverty and Income Distribution in Latin America: The Story of the 1980s." Technical Paper 351. World Bank, Washington, D.C.

Putman, R. 1993. *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton: Princeton University Press.

Ravallion, M. 1993. "Poverty Alleviation through Regional Targeting: A Case Study for Indonesia." In K. Hoff, A. Braverman, and J. E. Stiglitz, eds. *The Economics of Rural Organization*. Oxford: Oxford University Press.

———. 1999. "Appraising Workfare." *World Bank Research Observer* 14:31–48.

Ravallion, M., and G. Datt. 1995. "Is Targeting through a Work Requirement Efficient? Some Evidence for Rural India." In D. Van de Walle and K. Nead, eds. *Public Spending and the Poor: Theory and Evidence*. Baltimore: John Hopkins University Press.

Ravallion and Sen, 1994. "Impacts on rural poverty of land-based targeting: further results for Bangladesh." *World Development* 22:823-38.

Ravallion, M., and B. Sen, 1996. "When Method Matters; Toward a Resolution of the Debate about Bangladesh's Poverty Measures." *Economic Development and Cultural Change* 44:761–92.

Ravallion, M., and Q. Wodon. 1998. "Evaluating a Targeted Social Program When Placement is Decentralized." Policy Research Working Paper 1945. World Bank, Washington, D.C.

———. 1999. "Poor Areas, or Only Poor People?" *Journal of Regional Science* 39:689–711.

———. Forthcoming a. "Banking on the Poor? Branch Placement and Nonfarm Rural Development in Bangladesh." *Review of Development Economics.*

———. Forthcoming b. "Does Child Labor Displace Schooling?" *Economic Journal.*

Ray, D. 1998. *Development Economics.* Princeton: Princeton University Press.

Ray, R. 1998. "Analysis of Child Labour in Peru and Pakistan: A Comparative Study." Word processed. University of Tasmania.

Redegeld, H. 2000. "Reaching the Poorest: What Does It Take?" In Q. Wodon, ed., *"Extreme Poverty and Human Rights: Essays on Joseph Wresinski."* Word processed. World Bank, Washington, D.C.

Rees, H., and A. Shah. 1986. "An Empirical Analysis of Self-Employment in the U.K." *Journal of Applied Econometrics* 1:95–108.

Revenga, A., M. Riboud, and H. Tan. 1994. "The Impact of Mexico's Retraining Program on Employment and Wages." *World Bank Economic Review* 8:247–77.

Rodrick, D. 1999. "Why Is There so Much Insecurity in Latin America?." Word processed. Harvard University, Boston.

Rosenbaum, P., and D. Rubin. 1983. "The Central Role of rhe Propensity Score in Observational Studies for Causal Effects." *Biometrika* 70:41–55.

———. 1985. "Constructing a Control Group Using Multivariate Matched Sampling Methods that Incorporate the Propensity Score. *American Statistician* 39:35–39.

Rosenzweig, M. R. 1982 "Educational Subsidy, Agricultural Development, and Fertility Change." *Quarterly Journal of Economics* 97:67–88.

Sahn, D., and H. Alderman. 1995. "Incentive Effects on Labor Supply of Sri Lanka's Rice Subsidy." In D. Van de Walle and K. Nead, eds. *Public Spending and the Poor: Theory and Evidence*. Baltimore: John Hopkins University Press.

Salop, J., and S. Salop. 1976. "Self-Selection and Turnover in the Labor Market." *The Quarterly Journal of Economics* 90:619–27.

Sanchez Muñohierro, L. 1996. "La Familia Jornalera: Seno del Niño en Situacion Especialmente Dificil." In A. Brizzio de la Hoz, ed. *El Trabajo Infantil en Mexico*. Mexico City: Organizacion Internacional del Trabajo, UNICEF, and Universidad Veracruzana.

Sen, A. K. 1995. "The Political Economy of Targeting." In D. Van de Walle and K. Nead, eds. *Public Spending and the Poor: Theory and Evidence*. Baltimore: John Hopkins University Press.

Serageldin, I., and C. Grootaert. 1997. "Defining Social Capital. An Integrating View." Word processed. World Bank, Washington, D.C.

Siaens, C., and Q. Wodon. 1999. "Parental Occupation and Wages, Child Labor, and School Enrollment in Mexico." In World Bank, 1999a. *Government Programs and Poverty in Mexico*. Report 19214-ME. Washington, D.C.: World Bank.

Shorrocks, A. J. 1978a. "Measurement of Mobility." *Econometrica* 46:1013–24.

———. 1978b. "Income Inequality and Income Mobility." *Journal of Economic Theory* 19:376–93.

Skoufias, E., B. Davis, and J. Behrman. 1999. "Evaluacion del Sistema de Seleccion de Familias Beneficiarias en Progresa." In Progresa. *Mas Oportunidades para las Familias Pobres*. Mexico City.

Spence, A. M. 1974. *Market Signaling: Informational Transfer in Hiring and Related Screening Processes*. Cambridge: Harvard University Press.

Stark O., J. E. Taylor, and S. Yitzhaki. 1986. "Remittances and Inequality." *The Economic Journal* 96:722–40.

Subbarao K., A. Bonnerjee, J. Braithwaite, S. Carvalho, K. Ezemenari, C. Graham, and A. Thompson. 1997. *Safety Net Programs and Poverty Reduction: Lessons from Cross-Country Experience*. Washington, D.C.: World Bank.

STPS (Secretaría del Trabajo y Previsión Social) 1998. *Evaluación del Programa de Becas de Capacitación para Desempleados*. Mexico, DF.

Szekely, M., N. Lustig, M. Cumpa, and J. A. Mejia. 1999. "How Many Poor Are There Really? 2000 Options for Latin America." Word processed. Inter-American Development Bank, Washington, D.C.

Tuck, L., and K. Lindert. 1996. "From Universal Food Subsidies to a Self-Targeted Program—a Case Study in Tunisian Reform." Discussion Paper 351. World Bank, Washington, D.C.

UNDP (United Nations Development Program). 1999. *Human Development Report 1999*. New York: Oxford University Press.

UNICEF. 1996. *Informe Final del Segundo Censo de Menores en Situacion de Calle de la Ciudad de Mexico*. Mexico City.

United States Department of Labor. 1998. *By the Sweat and Toil of Children*. Vol. 5: *Efforts to Eliminate Child Labor* Washington, D.C.: Bureau of Labor Statistics.

Universidad de Chile. 1992. *Estudio Sobre Los Programas Especiales de Empleo*, Departamento de Economia, Santiago, Chile.[CITED P. 96]

Villareal, M. E., and C. P. Chapetón. 1997. Trabajo Infantil: Concepción y Realidad. Guatemala City: Program of Support for Maternal and Child Health—PAMI.

Wodon, Q. 1997a. "Food Energy Intake and Cost of Basic Needs: Measuring Poverty in Bangladesh." *Journal of Development Studies* 34:66–101.

———. 1997b. "Targeting the Poor Using ROC Curves." *World Development* 25:2083–92.

———. 1999a. "Between Group Inequality and Targeted Transfers." *Review of Income and Wealth* 45:21–39.

———. 1999b. "Who You Are or Where You Live? Micro Determinants of Income, Growth and Inequality in Mexico." In World Bank, 1999a. *Government Programs and Poverty in Mexico*. Report 19214-ME. Washington, D.C.

———. 2000a. "Micro Determinants of Consumption, Poverty, Growth and Inequality in Bangladesh. *Applied Economics*, forthcoming.

———, ed. 2000b. "Extreme Poverty and Human Rights: Essays on Joseph Wresinski." Word processed. World Bank, Washington, D.C.

Wodon, Q., N. Hicks, B. Ryan, and G. Gonzalez. 2000. "Are Governments Pro-Poor But Short Sighted? Targeted and Social Spending for the Poor During Booms and Busts." Word processed. World Bank, Washington, D.C.

Wodon, Q., and M. Minowa. 1999. "Training the Urban Unemployed: A Reevaluation of Mexico's Probecat." In World Bank, 1999a. *Government Programs and Poverty in Mexico*. Report 19214-ME. Washington, D.C.

Wodon, Q., and A. Molnar. 1999. "Poverty and Indigenous Attitudes towards Government Programs in Mexico." In World Bank, 1999a. *Government Programs and Poverty in Mexico*. Report 19214-ME. Washington, D.C.

Wodon, Q., and C. Siaens. 1999a. "Child Labor and Government Programs in Mexico." In World Bank, 1999a. *Government Programs and Poverty in Mexico*. Report 19214-ME. Washington, D.C.

———. 1999b. "Food Subsidies and Consumption Inequality in Mexico." In World Bank, 1999a. *Government Programs and Poverty in Mexico*. Report 19214-ME. Washington, D.C.

———. 2000. "Estimating the Cost of Child Labor." Word processed. World Bank, Washington, D.C.

Wodon, Q., and S. Yitzhaki. 2000a. "Using Mobility to Predict Inequality: An Application to the Human Development Index." Word processed. World bank, Washington, D.C.

———. 2000b. "Targeting, Allocation among Program Beneficiaries, and Inequality." Word processed. World bank, Washington, D.C.

Wodon, Q., G. Hall, and L. Rawlings. 2000. "Community Participation in A Social Investment Fund." Word processed. World Bank, Washington, D.C.

Wodon, Q., W. Maloney, and M. Barenstein. 2000. "Self-Employment as an Explanation for High Inequality in Latin America." Word processed. World Bank, Washington, D.C.

Wolpin, Kenneth. 1977. "Education and Screening." *American Economic Review*. 67:949–58.

World Bank. 1990. *World Development Report 1990*. Washington D.C.

———. 1991. *Venezuela Poverty Study: From Generalized Subsidies to Targeted Programs*. Report 9114-VE. Washington, D.C.

———. 1993. *Uruguay Poverty Assessment: Public Social Expenditures and Their Impact on the Income Distribution*. Report 9663-UR. Washington, D.C.

———. 1994a. *Colombia Poverty Assessment Report.* Report 12673-CO. Washington, D.C.

———.1994b. *El Salvador: The Challenge of Poverty Alleviation.* Report 12315-ES . . Washington, D.C.

———.1994c. *Guyana Strategies for Reducing Poverty.* Report 12861-GUA. Washington, D.C.

———.1994d. *Honduras: Country Economic Memorandum/Poverty Assessment.* Report 13317-HO. Washington, D.C.

———. 1994e. *Jamaica: A strategy for Growth and Poverty Reduction Country economic Memorandum.* Report 12702-JM.. Washington, D.C.

———. 1995a. *Argentina's Poor: A Profile.* Report 13318-AR. Washington, D.C.

———. 1995b. *Brazil: A Poverty Assessment.* Report 14323-BR. Washington, D.C.

———. 1995c. *The Dominican Republic Growth with Equity: An Agenda for Reform.* Report 13619-DO. Washington, D.C.

———. 1995d. *Ecuador Poverty Report.* Report 14533-EC. Washington, D.C.

———. 1995e. *Guatemala An Assessment of Poverty.* Report 12313-GU. Washington, D.C.

———. 1995f. *Republic of Nicaragua Poverty Assessment.* Report 143038-NI. Washington, D.C.

———. 1995g. *Trinidad and Tobago Poverty and Unemployment in an Oil Based Economy.* Report 14382-TR. Washington, D.C.

———. 1996a. *Bolivia Poverty, Equity, and Income: Selected Policies for Expanding Earning Opportunities for the Poor.* Report 15272-BO. Washington, D.C.

———. 1996b. *Caribbean Countries: Poverty Reduction and Human Resource Development in the Caribbean.* Report 15342-LAC. Washington, D.C.

———. 1996c. *Violence and Urban Poverty in Jamaica: Breaking the Cycle.* Report 15895-JM. Washington, D.C.

———. 1997a. *Poverty and Income Distribution in a High-Growth Economy Chile:1987–95.* Report 16377 CH. Washington, D.C.

———. 1997b. *Costa Rica Identifying the Social Needs of the Poor: An Update.* Report 15449-CR. Washington, D.C.

———. 1998a. *Haiti The Challenges of Poverty Reduction.* Report 17242-HA. Washington, D.C.

———. 1998b. *Poverty and Social Developments in Peru, 1994–97.* Washington, D.C.

———. 1999a. *Government Programs and Poverty in Mexico.* Report 19214-ME. Washington, D.C.

———. 1999b. *Panama Poverty Assessment.* Report 18801-PAN. Washington, D.C.

———. 1999c. *Poor People in a Rich Country: A Poverty Report for Argentina.* Washington, D.C.

———. 2000. *Mexico: Earnings Inequality after Mexico's Economic and Educational Reforms.* Report 19945-ME. Washington, D.C.

———. Forthcoming. *World Development Report 2000–2001.* Washington , D.C.

World Health Organisation. 1997. *WHO Global Database on Child Growth and Malnutrition.* Geneva.

Wresinski, J. 2000. "The Very Poor, Living Proof of the Indivisibility of Human Rights." In Q. Wodon, ed., "Extreme poverty and Human Rights: Essays on Joseph Wresinski." Word processed.. Washington, DC: World Bank.

Yitzhaki, S., and Q. Wodon. 2000. "Mobility, Inequality, and Horizontal Equity." Word processed.. Washington, DC: World Bank.

Distributors of World Bank Group Publications

Prices and credit terms vary from country to country. Consult your local distributor before placing an order.

ARGENTINA
Alonso Publications SA
Av. Cordoba 1877
1120 Ciudad de Buenos Aires
Tel: (54 11) 4815 8156
Fax: (54 11) 4815 8156
E-mail: wpbooks@infovia.com.ar

AUSTRALIA, FIJI, PAPUA NEW GUINEA, SOLOMON ISLANDS, VANUATU, AND SAMOA
D.A. Information Services
648 Whitehorse Road
Mitcham 3132, Victoria
Tel: (61) 3 9210 7777
Fax: (61) 3 9210 7788
E-mail: service@dadirect.com.au
URL: http://www.dadirect.com.au

AUSTRIA
Gerold and Co.
Graben 31
A-1011 Wien
Tel: (43 1) 512 47 31 0
Fax: (43 1) 512 47 31 29
URL: http://www.gerold.co.at.online

BANGLADESH
Micro Industries Development Assistance Society (MIDAS)
House 5, Road 16
Dhanmondi R/Area
Dhaka 1209
Tel: (880 2) 326427
Fax: (880 2) 811188

BELGIUM
Jean De Lannoy
Av. du Roi 202
1060 Brussels
Tel: (32 2) 538 5169
Fax: (32 2) 538 0841

BRAZIL
Publicações Técnicas Internacionais Ltda.
Rua Peixoto Gomide, 209
01409 Sao Paulo, SP
Tel: (55 11) 259 6644
Fax: (55 11) 258 6990
E-mail: postmaster@pti.uol.br
URL: http://www.uol.br

CANADA
Renouf Publishing Co. Ltd.
5369 Canotek Road
Ottawa, Ontario K1J 9J3
Tel: (613) 745 2665
Fax: (613) 745-7660
E-mail: order.dept@renoufbooks.com
URL: http://www.renoufbooks.com

CHINA
China Financial & Economic Publishing House
8, Da Fo Si Dong Jie
Beijing
Tel: (86 10) 6401 7365
Fax: (86 10) 6401 7365

China Book Import Centre
P.O. Box 2825
Beijing

Chinese Corporation for Promotion of Humanities
52, You Fang Hu Tong
Kuan Nei Da Jie
Beijing
Tel: (86 10) 660 72 494
Fax: (86 10) 660 72 494

COLOMBIA
Infoenlace Ltda.
Carrera 6 No. 51-21
Apartado Aereo 34270
Santafe de Bogota, D.C.
Tel: (57 1) 285 2798
Fax: (57 1) 285 2798

COTE D'IVOIRE
Centre d'Edition et de Diffusion Africaines (CEDA)
04 B.P. 541
Abidjan 04
Tel: (225) 24 6510, 24 6511
Fax: (225) 25 0567

CYPRUS
Center for Applied Research
Cyprus College
6, Diogenes Street, Engomi
P.O. Box 2006
Nicosia
Tel: (357 2) 59 0730
Fax: (357 2) 66 2051

CZECH REPUBLIC
USIS, NIS Prodejna
Havelkova 22
130 00 Prague 3
Tel: (420 2) 2423 1486
Fax: (420 2) 2423 1114
URL: http://www.nis.cz

DENMARK
SamfundsLitteratur
Rosenoerns Alle 11
DK-1970 Frederiksberg C
Tel: (45 35) 351942
Fax: (45 35) 357822
URL: http://www.si.cbs.dk

ECUADOR
Libri Mundi
Libreria Internacional
P.O. Box 17-01-3029
Juan Leon Mera 851
Quito
Tel: (593 2) 521-606; (593 2) 544-185
Fax: (593 2) 504-209
E-mail: libmund1@librimundi.com.ec
E-mail: libmund2@librimundi.com.ec

CODEU
Ruiz de Castilla 763, Edif. Expocolor
Primer piso, Of. #2
Quito
Tel/Fax: (593 2) 507-383, 253-091
E-mail: codeu@impsat.net.ec

EGYPT, ARAB REPUBLIC OF
Al Ahram Distribution Agency
Al Galaa Street
Cairo
Tel: (20 2) 578-6083
Fax: (20 2) 578-6833

The Middle East Observer
41, Sherif Street
Cairo
Tel: (20 2) 393-9732
Fax: (20 2) 393-9732

FINLAND
Akateeminen Kirjakauppa
P.O. Box 128
FIN-00101 Helsinki
Tel: (358 0) 121 4418
Fax: (358 0) 121 4435
E-mail: akatilaus@stockmann.fi
URL: http://www.akateeminen.com

FRANCE
Editions Eska, DBJ
48, rue Gay Lussac
75005 Paris
Tel: (33 1) 55 42 73 08
Fax: (33 1) 43 29 91 67

GERMANY
UNO-Verlag
Poppelsdorfer Allee 55
53115 Bonn
Tel: (49 228) 949020
Fax: (49 228) 217492
URL: http://www.uno-verlag.de
E-mail: unoverlag@aol.com

GHANA
Epp Books Services
P.O. Box 44
TUC
Accra
Tel: 223 21 778843
Fax: 223 21 779099

GREECE
Papasotiriou S.A.
35, Stournara Str.
106 82 Athens
Tel: (30 1) 364 1826
Fax: (30 1) 364 8254

HAITI
Culture Diffusion
5, Rue Capois
C.P. 257
Port-au-Prince
Tel: (509) 23 9260
Fax: (509) 23 4858

HONG KONG, CHINA, MACAO
Asia 2000 Ltd.
Sales & Circulation Department
302 Seabird House
22-28 Wyndham Street, Central
Hong Kong, China
Tel: (852) 2530 1409
Fax: (852) 2526 1107
E-mail: sales@asia2000.com.hk
URL: http://www.asia2000.com.hk

HUNGARY
Euro Info Service
Margitsziget, Europa Haz
H-1138 Budapest
Tel: (36 1) 350 80 24, 350 80 25
Fax: (36 1) 350 90 32
E-mail: euroinfo@mail.matav.hu

INDIA
Allied Publishers Ltd.
751 Mount Road
Madras - 600 002
Tel: (91 44) 852-3938
Fax: (91 44) 852-0649

INDONESIA
Pt. Indira Limited
Jalan Borobudur 20
P.O. Box 181
Jakarta 10320
Tel: (62 21) 390-4290
Fax: (62 21) 390-4289

IRAN
Ketab Sara Co. Publishers
Khaled Eslamboli Ave., 6th Street
Delafrooz Alley No. 8
P.O. Box 15745-733
Tehran 15117
Tel: (98 21) 8717819; 8716104
Fax: (98 21) 8712479
E-mail: ketab-sara@neda.net.ir

Kowkab Publishers
P.O. Box 19575-511
Tehran
Tel: (98 21) 258-3723
Fax: (98 21) 258-3723

IRELAND
Government Supplies Agency
Oifig an tSoláthair
4-5 Harcourt Road
Dublin 2
Tel: (353 1) 661-3111
Fax: (353 1) 475-2670

ISRAEL
Yozmot Literature Ltd.
P.O. Box 56055
3 Yohanan Hasandlar Street
Tel Aviv 61560
Tel: (972 3) 5285-397
Fax: (972 3) 5285-397

R.O.Y. International
PO Box 13056
Tel Aviv 61130
Tel: (972 3) 649 9469
Fax: (972 3) 648 6039
E-mail: royil@netvision.net.il
URL: http://www.royint.co.il

Palestinian Authority/Middle East
Index Information Services
P.O.B. 19502 Jerusalem
Tel: (972 2) 6271219
Fax: (972 2) 6271634

ITALY, LIBERIA
Licosa Commissionaria Sansoni SPA
Via Duca Di Calabria, 1/1
Casella Postale 552
50125 Firenze
Tel: (39 55) 645-415
Fax: (39 55) 641-257
E-mail: licosa@ftbcc.it
URL: http://www.ftbcc.it/licosa

JAMAICA
Ian Randle Publishers Ltd.
206 Old Hope Road, Kingston 6
Tel: 876-927-2085
Fax: 876-977-0243
E-mail: irpl@colis.com

JAPAN
Eastern Book Service
3-13 Hongo 3-chome, Bunkyo-ku
Tokyo 113
Tel: (81 3) 3818-0861
Fax: (81 3) 3818-0864
E-mail: orders@svt-ebs.co.jp
URL: http://www.bekkoame.or.jp/~svt-ebs

KENYA
Africa Book Service (E.A.) Ltd.
Quaran House, Mfangano Street
P.O. Box 45245
Nairobi
Tel: (254 2) 223 641
Fax: (254 2) 330 272

Legacy Books
Loita House
Mezzanine 1
P.O. Box 68077
Nairobi
Tel: (254) 2 330853, 221426
Fax: (254) 2-330854, 561654
E-mail: Legacy@form-net.com

KOREA, REPUBLIC OF
Dayang Books Trading Co.
International Division
783-20, Pangba Bon-Dong, Socho-ku
Seoul
Tel: (82 2) 536 9555
Fax: (82 2) 536 0025
E-mail: seamap@chollian.net

Eulyoo Publishing Co., Ltd.
46-1, Susong-Dong
Jongro-Gu
Seoul
Tel: (82 2) 734-3515
Fax: (82 2) 732-9154

LEBANON
Librairie du Liban
P.O. Box 11-9232
Beirut
Tel: (961 9) 217 944
Fax: (961 9) 217 434
E-mail: nsayegh@librairie-du-liban.com.lb
URL: http://www.librairie-du-liban.com.lb

MALAYSIA
University of Malaya Cooperative Bookshop, Limited
P.O. Box 1127
Jalan Pantai Baru
59700 Kuala Lumpur
Tel: (60 3) 756-5000
Fax: (60 3) 755-4424
E-mail: umkoop@tm.net.my

MEXICO
INFOTEC
Av. San Fernando No. 37
Col. Toriello Guerra
14050 Mexico, D.F.
Tel: (52 5) 624-2800
Fax: (52 5) 624-2822
E-mail: infotec@rtn.net.mx
URL: http://rtn.net.mx

Mundi-Prensa Mexico S.A. de C.V.
c/Rio Panuco, 141-Colonia Cuauhtemoc
06500 Mexico, D.F.
Tel: (52 5) 533-5658
Fax: (52 5) 514-6799

NEPAL
Everest Media International Services (P.) Ltd.
GPO Box 5443
Kathmandu
Tel: (977 1) 416 026
Fax: (977 1) 224 431

NETHERLANDS
De Lindeboom/Internationale Publicaties b.v.
P.O. Box 202, 7480 AE Haaksbergen
Tel: (31 53) 574-0004
Fax: (31 53) 572-9296
E-mail: lindeboo@worldonline.nl
URL: http://www.worldonline.nl/~lindeboo

NEW ZEALAND
EBSCO NZ Ltd.
Private Mail Bag 99914
New Market
Auckland
Tel: (64 9) 524-8119
Fax: (64 9) 524-8067

Oasis Official
P.O. Box 3627
Wellington
Tel: (64 4) 499 1551
Fax: (64 4) 499 1972
E-mail: oasis@actrix.gen.nz
URL: http://www.oasisbooks.co.nz/

NIGERIA
University Press Limited
Three Crowns Building Jericho
Private Mail Bag 5095
Ibadan
Tel: (234 22) 41-1356
Fax: (234 22) 41-2056

PAKISTAN
Mirza Book Agency
65, Shahrah-e-Quaid-e-Azam
Lahore 54000
Tel: (92 42) 735 3601
Fax: (92 42) 576 3714

Oxford University Press
5 Bangalore Town
Sharae Faisal
PO Box 13033
Karachi-75350
Tel: (92 21) 446307
Fax: (92 21) 4547640
E-mail: ouppak@TheOffice.net

Pak Book Corporation
Aziz Chambers 21, Queen's Road
Lahore
Tel: (92 42) 636 3222, 636 0885
Fax: (92 42) 636 2328
E-mail: pbc@brain.net.pk

PERU
Editorial Desarrollo SA
Apartado 3824, Ica 242 OF. 106
Lima 1
Tel: (51 14) 285380
Fax: (51 14) 286628

PHILIPPINES
International Booksource Center Inc.
1127-A Antipolo St. Barangay Venezuela
Makati City
Tel: (63 2) 896 6501, 6505, 6507
Fax: (63 2) 896 1741

POLAND
International Publishing Service
Ul. Piekna 31/37
00-677 Warszawa
Tel: (48 2) 628-6089
Fax: (48 2) 621-7255
E-mail: books%ips@kp.atm.com.pl
URL: http://www.ipscg.waw.pl/ips/export

PORTUGAL
Livraria Portugal
Apartado 2681, Rua Do Carmo 70-74
1200 Lisbon
Tel: (1) 347-4982
Fax: (1) 347-0264

ROMANIA
Compani De Librarii Bucuresti S.A.
Str. Lipscani no. 26, sector 3
Bucharest
Tel: (40 1) 313 9645
Fax: (40 1) 312 4000

RUSSIAN FEDERATION
Isdatelstvo «Ves Mir»
9a, Kolpachniy Pereulok
Moscow 101831
Tel: (7 095) 917 87 49
Fax: (7 095) 917 92 59
ozimarin@glasnet.ru

SINGAPORE, TAIWAN, CHINA, MYANMAR, BRUNEI
Hemisphere Publication Services
41 Kallang Pudding Road #04-03
Golden Wheel Building
Singapore 349316
Tel: (65) 741-5166
Fax: (65) 742-9356
E-mail: ashgate@asianconnect.com

SLOVENIA
Gospodarski vestnik Publishing Group
Dunajska cesta 5
1000 Ljubljana
Tel: (386 61) 133 83 47, 132 12 30
Fax: (386 61) 133 80 30
E-mail: repansekj@gvestnik.si

SOUTH AFRICA, BOTSWANA
For single titles:
Oxford University Press Southern Africa
Vasco Boulevard, Goodwood
P.O. Box 12119, N1 City 7463
Cape Town
Tel: (27 21) 595 4400
Fax: (27 21) 595 4430
E-mail: oxford@oup.co.za

For subscription orders:
International Subscription Service
P.O. Box 41095
Craighall
Johannesburg 2024
Tel: (27 11) 880 1448
Fax: (27 11) 880 6248
E-mail: iss@is.co.za

SPAIN
Mundi-Prensa Libros, S.A.
Castello 37
28001 Madrid
Tel: (34 91) 4 363700
Fax: (34 91) 5 753998
E-mail: libreria@mundiprensa.es
URL: http://www.mundiprensa.com

Mundi-Prensa Barcelona
Consell de Cent, 391
08009 Barcelona
Tel: (34 3) 488 3492
Fax: (34 3) 487-7659
E-mail: barcelona@mundiprensa.es

SRI LANKA, THE MALDIVES
Lake House Bookshop
100, Sir Chittampalam Gardiner Mawatha
Colombo 2
Tel: (94 1) 32105
Fax: (94 1) 432104
E-mail: LHL@sri.lanka.net

SWEDEN
Wennergren-Williams AB
P.O. Box 1305
S-171 25 Solna
Tel: (46 8) 705-97-50
Fax: (46 8) 27-00-71
E-mail: mail@wwi.se

SWITZERLAND
Librairie Payot Service Institutionnel
Citmintes-de-Montbenon 30
1002 Lausanne
Tel: (41 21) 341-3229
Fax: (41 21) 341-3235

ADECO Van Diermen
Editions Techniques
Ch. de Lacuez 41
CH1807 Blonay
Tel: (41 21) 943 2673
Fax: (41 21) 943 3605

THAILAND
Central Books Distribution
306 Silom Road
Bangkok 10500
Tel: (66 2) 2336930-9
Fax: (66 2) 237-8321

TRINIDAD & TOBAGO AND THE CARRIBBEAN
Systematics Studies Ltd.
St. Augustine Shopping Center
Eastern Main Road, St. Augustine
Trinidad & Tobago, West Indies
Tel: (868) 645-8466
Fax: (868) 645-8467
E-mail: tobe@trinidad.net

UGANDA
Gustro Ltd.
PO Box 9997, Madhvani Building
Plot 16/4 Jinja Rd.
Kampala
Tel: (256 41) 251 467
Fax: (256 41) 251 468
E-mail: gus@swiftuganda.com

UNITED KINGDOM
Microinfo Ltd.
P.O. Box 3, Omega Park, Alton
Hampshire GU34 2PG
England
Tel: (44 1420) 86848
Fax: (44 1420) 89889
E-mail: wbank@microinfo.co.uk
URL: http://www.microinfo.co.uk

The Stationery Office
51 Nine Elms Lane
London SW8 5DR
Tel: (44 171) 873-8400
Fax: (44 171) 873-8242
URL: http://www.the-stationery-office.co.uk/

VENEZUELA
Tecni-Ciencia Libros, S.A.
Centro Cuidad Comercial Tamanco
Nivel C2, Caracas
Tel: (58 2) 959 5547, 5035, 0016
Fax: (58 2) 959 5636

ZAMBIA
University Bookshop, University of Zambia
Great East Road Campus
P.O. Box 32379
Lusaka
Tel: (260 1) 252 576
Fax: (260 1) 253 952

ZIMBABWE
Academic and Baobab Books (Pvt.) Ltd.
4 Conald Road, Graniteside
P.O. Box 567
Harare
Tel: 263 4 755035
Fax: 263 4 781913

BEST COPY AVAILABLE

Recent World Bank Technical Papers *(continued)*

No. 434 Csaba Csaki and John Nash, eds., *Regional and International Trade Policy: Lessons for the EU Accession in the Rural Sector—World Bank/FAO Workshop, June 20–23, 1998*

No. 435 Iain Begg, *EU Investment Grants Review*

No. 436 Roy Prosterman and Tim Hanstad, ed., *Legal Impediments to Effective Rural Land Relations in Eastern Europe and Central Asia: A Comparative Perspective*

No. 437 Csaba Csaki, Michel Dabatisse, and Oskar Honisch, *Food and Agriculture in the Czech Republic: From a "Velvet" Transition to the Challenges of EU Accession*

No. 438 George J. Borjas, *Economic Research on the Determinants of Immigration: Lessons for the European Union*

No. 439 Mustapha Nabli, *Financial Integration, Vulnerabilities to Crisis, and EU Accession in Five Central European Countries*

No. 440 Robert Bruce, Ioannis Kessides, and Lothar Kneifel, *Overcoming Obstacles to Liberalization of the Telecom Sector in Estonia, Poland, the Czech Republic, Slovenia, and Hungary: An Overview of Key Policy Concerns and Potential Initiatives to Facilitate the Transition Process*

No. 441 Bartlomiej Kaminski, *Hungary: Foreign Trade Issues in the Context of Accession to the EU*

No. 442 Bartlomiej Kaminski, *The Role of Foreign Direct Investment and Trade Policy in Poland's Accession to the European Union*

No. 443 Luc Lecuit, John Elder, Christian Hurtado, François Rantrua, Kamal Siblini, and Maurizia Tovo, *DeMIStifying MIS: Guidelines for Management Information Systems in Social Funds*

No. 444 Robert F. Townsend, *Agricultural Incentives in Sub-Saharan Africa: Policy Challenges*

No. 445 Ian Hill, *Forest Management in Nepal: Economics of Ecology*

No. 446 Gordon Hughes and Magda Lovei, *Economic Reform and Environmental Performance in Transition Economies*

No. 447 R. Maria Saleth and Ariel Dinar, *Evaluating Water Institutions and Water Sector Performance*

No. 449 Keith Oblitas and J. Raymond Peter in association with Gautam Pingle, Halla M. Qaddumi, and Jayantha Perera, *Transferring Irrigation Management to Farmers in Andhra Pradesh, India*

No. 450 Andrés Rigo Sureda and Waleed Haider Malik, eds., *Judicial Challenges in the New Millennium: Proceedings of the Second Summit of the Ibero-American Supreme Courts*

No. 451 World Bank, *Privatization of the Power and Natural Gas Industries in Hungary and Kazakhstan*

No. 452 Lev Freinkman, Daniel Treisman, and Stephen Titov, *Subnational Budgeting in Russia: Preempting a Potential Crisis*

No. 453 Bartlomiej Kaminski and Michelle Riboud, *Foreign Investment and Restructuring: The Evidence from Hungary*

No. 454 Gordon Hughes and Julia Bucknall, *Poland: Complying with EU Environmental Legislature*

No. 455 Dale F. Gray, *Assessment of Corporate Sector Value and Vulnerability: Links to Exchange Rate and Financial Crises*

No. 456 Salman M.A. Salman, ed., *Groundwater: Legal and Policy Perspectives: Proceedings of a World Bank Seminar*

No. 457 Mary Canning, Peter Moock, and Timothy Heleniak, *Reforming Education in the Regions of Russia*

No. 458 John Gray, *Kazakhstan: A Review of Farm Restructuring*

No. 459 Zvi Lerman and Csaba C[illegible]i, *Ukraine: Review of Farm Restructuring Experiences*

No. 460 Gloria La Cava and Rafaella Y. Nanetti, *Albania: Filling the Vulnerability Gap*

No. 461 Ayse Kudat, Stan Peabody, and Caglar Keyder, eds., *Social Assessment and Agricultural Reform in Central Asia and Turkey*

No. 463 Stephen Foster, John Chilton, Marcus Moench, Franklin Cardy, and Manuel Schiffler, *Groundwater in Rural Development: Facing the Challenges of Supply and Resource Sustainability*

No. 465 Csaba Csaki and Zvi Lerman, eds., *Structural Change in the Farming Sectors in Central and Eastern Europe: Lessons for EU Accession—Second World Bank/FAO Workshop, June 27–29, 1999*

No. 466 Barbara Nunberg, *Ready for Europe: Public Administration Reform and European Union Accession in Central and Eastern Europe*

No. 469 Laurian Unnevehr and Nancy Hirschhorn, *Food Safety Issues in the Developing World*

No. 470 Alberto Valdés, ed., *Agricultural Support Policies in Transition Economies*

No. 473 Esen Ulgenerk and Leila Zlaoui, *From Transition to Accession: Developing Stable and Competitive Financial Markets in Bulgaria*

THE WORLD BANK

1818 H Street, N.W.
Washington, D.C. 20433 U.S.A.

Telephone: 202-477-1234

Facsimile: 202-477-6391

Telex: MCI 64145 WORLDBANK
MCI 248423 WORLDBANK

Internet: www.worldbank.org

E-mail: books@worldbank.org

ISBN 0-8213-4754-3

BEST COPY AVAILABLE

149